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OUTSOURCING ANNOUNCEMENTS AND MARKET VALUE

Information System and Manufacturing Outsourcing Contracts

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ABSTRACT
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Objectives of the Study The objective of this study is to examine the impact of information system (IS) or electronic manufacturing services (EMS) outsourcing announcement on the capital market value of both the outsourcer and contractor. Specifically, I will try to answer to two main questions: (1) Do outsourcing announcements affect the market value of the signing firms in terms of producing abnormal stock returns? (2) What factors explain the observed variance in the market reaction to outsourcing announcements? This study contributes to the current stream of outsourcing event studies in several ways. Firstly, it provides a large enough sample size to test the impact of several firm and event characteristics that have not been tested before. Secondly, it expands the scope by studying also the market reaction of the contractor, not just the outsourcer. Finally, this study will investigate also electronic manufacturing outsourcing announcements in addition to information system outsourcing.

Data and Methodology The dataset is based on 316 outsourcing announcements between 1996 and 2004. The sample is obtained by using key word search from various Internet news services and outsourcing contractors' web pages. The accounting and return data has been collected from Thomson Financial database. The study utilizes event study methodology to examine the excess returns for 316 outsourcing announcements in both univariate and multivariate settings to examine the market reaction to outsourcing announcements and the impact of different firm and event characteristics both for outsourcer and contractor. Various event windows prior, after and around the announcement day have been used, although the study focuses on a three day event window starting at the announcement day

Results: Evidence presented in this study indicates that outsourcing is a price sensitive event. Research findings indicate a positive but insignificant market value gain for outsourcers (0,21% and 0,46% for large and reduced sample respectively) and a significant positive value gain for contractors (1,30% and 1,63%) using three day event window starting at the announcement day. The combined entity of outsourcer and contractor experience a positive but insignificant gain (0,33% and 0,53%). Additionally, there appears to be a strong size effect in the percentage returns leading to negative dollar returns for outsourcers (-$270 million) and only slightly positive dollar return for contractors ($18 million) over the same three-day period.

Empirical evidence in this study suggests that outsourcing is not value adding per se, particularly for outsourcer, but depends on several firm and event characteristics. This is consistent with the main findings from the previous studies on this topic. Outsourcers' market reaction is heavily conditioned on the size, profitability and industry of the outsourcer. Specifically, large and unprofitable companies as well as financial institutions appear to have a weaker market reaction. The statistically significant effects observed in this study are explained by the existence of information asymmetry in the capital markets for smaller firms, by the short-term motives of outsourcing for unprofitable firms and by the adverse effects of outsourcing core competencies for financial institutions. Similarly, contractors' market reaction depends on the size of the contractor, and the size and structure of the contract. Small contractors and large and alliance based contracts appear to be rewarded by investors. The significant effects for contractors are explained by the information asymmetry for small firms, stronger dependency of outsourcer in large deals and by the strategic importance of alliance based outsourcing contracts.

Keywords Outsourcing, Information System, Electronic Manufacturing Services

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1 Introduction

1.1 Background and motivation

As fairly new and growing phenomena, outsourcing provides fertile ground for academic research. As a management practice it has been in existence for hundreds of years, but it was the Eastman Kodak deal in July 1989, in which Eastman Kodak Co. handed over the management of its data centers to IBM Corp., that suddenly pushed outsourcing into the spotlight. During, the last 15 years outsourcing has developed to both an important business approach and a very popular strategic management initiative together with the growing interest of academics as well as other groups such as consultants and industry forums.

Recently published market surveys unanimously report outsourcing to be the bright spot in IT services for the years to come. Market research firm Gartner Group for example estimates the worldwide market for IT outsourcing to grow from 160 to 230 billion USD (from 2002 to 2007) and the market for business process outsourcing to expand even stronger from 110 to 175 billion USD in the same time frame (Caldwell and Young 2003). Also academics share this view (Lancelotti et al. 2003; Willcocks et al. 2004) and support the case of a market which is large and growing (Lancellotti et al. 2003), still requiring more research.

1.2. Related research

Outsourcing can be framed as a "make-versus-buy" decision facing a firm. In its generic form it has been studied in several settings. Outsourcing research traditionally addresses three major questions: (1) why a corporation should employ outsourcing as a strategic tool, (2) what to outsource and (3) how outsourcing should be conducted (e.g. contractual or relationship matters). The most current area of interest is the discussion of the possible implications of outsourcing.

However, the impact of outsourcing on the market value of the contracting companies has received only limited investigation. These event studies aim to extend the existing knowledge by adding the component of a neutral referee, the capital market. Furthermore, investigating

the market's reaction to outsourcing related issues is critically important to business managers, as protecting and increasing firm value is one of their key performance criteria.

The first serious academic event study related to the market reaction of outsourcing announcements was conducted by Hayes et al. (2000), who examined the market reaction of outsourcer to 77 IS outsourcing announcements between 1990 and 1997. They found a statistically significant positive market reaction for small and service firms but not for the whole sample. Since that there appears to have been only a few studies examining the market reaction of outsourcing announcements using event study methodology. These studies are often limited by small sample size, IS outsourcing focus, and narrow set of explanatory variables. The results reported by previous event studies have been mixed. Some have found a positive and significant association, while most have found a positive but insignificant relationship between outsourcing announcement and the market value of the outsourcer. Contractors' market reaction has been examined only in two studies that are covered in this paper and the results are somewhat inconsistent. Gao (2005) found a statistically significant positive market reaction for contractors using the largest sample size so far, whereas Gellrich and Gewall (2005) found negative but insignificant reaction, when they studied outsourcing by financial institutions.

1.3. Objective and contribution

The purpose of this study is to examine the effect of announcing an agreement to outsource all or a portion (major) of a firm's information system (IS) functions or electronic manufacturing services (EMS) on the capital market value of both the outsourcer and contractor. The current study complements and extends extant IS and manufacturing outsourcing research, as it integrates efficient market and capital market theory into ongoing investigations aimed at identifying the underlying determinants and implications of outsourcing decisions. Using an event study methodology, this Thesis investigates the abnormal market returns associated with information system and electronic manufacturing outsourcing announcements. Specifically, I will try to answer to two main questions: (1) Do outsourcing announcements affect the market value of the signing firms in terms of producing abnormal stock returns? (2) What factors explain the observed variance in the market reaction to outsourcing announcements?

This study will contribute to the current stream of outsourcing event studies in at least three ways. First, the sample size of this study is significantly larger than in most of the previous studies, making it possible to test new variables and hypothesis potentially explaining the market reaction on outsourcing announcements. Secondly, I will study also the market reaction of the contractor, not just the outsourcer. Additionally I will test whether the combined entity (outsourcer and contractor) show statistically significant market reaction on outsourcing announcement in order to assess if the outsourcing is on a whole a positive or not, independent on the way the benefits are distributed between the two parties. Finally, this study will investigate also electronic manufacturing outsourcing announcements in addition to IT outsourcing and thus further expand the scope from the previous studies.

Evidence presented in this study indicates that outsourcing is a price sensitive event, particularly for the contractor, who experiences a significant wealth gain (percentually) from outsourcing. Accordingly, shareholders of the outsourcing firm experience only a small wealth gain (0,21% to 0,46%) from outsourcing during the three-day period starting at the announcement day, whereas the shareholders of the contractors experience a much greater wealth gain (1,30% to 1,63%). Additionally, there appears to be a strong size effect in the percentage returns leading to negative dollar returns for outsourcers (-$270 million) and only slightly positive dollar return for ($18 million) contractors over the same three-day period. Therefore, it is concluded that outsourcing is not value adding per se but depends on the size of the outsourcer and contractor in addition to several other firm characteristics. These results are in line with earlier studies reporting positive but insignificant market reaction for the outsourcer (Hayes et al. 2001; Gao 2005). Additionally, Gao (2005) reported statistically significant positive reaction for contractor consistent with the findings of this study.

Significant differences exist with regard to the capital market's reaction to outsourcing announcements among both outsourcers and contractors. Based on the statistical evidence it is concluded that investors appear to distinguish between the various deals and base their evaluation of the newly formed partnership on the deal characteristics rather than on general considerations regarding outsourcing. Consequently, the market value of outsourcing firms announcing electronic manufacturing and information systems outsourcing contracts is conditioned on the size, profitability and industry of the firm. Based on the statistical evidence, there is strong empirical support for the significance of these three variables. For

smaller firms, market values are significantly positively impacted by the decision to outsource manufacturing or information technology, whereas for larger firms the impact is weaker. Outsourcing firms with high profitability appear to have better stock market reaction when compared to companies with lower profitability. Additionally the market values of financial institutions are more negatively affected by the outsourcing deal when compared to other firms. In addition to these three firm characteristics also the deal size and firm risk appeared to have an effect on the market reaction, although the empirical support is less consistent and somewhat mixed. The size effect found in this study supports the hypothesis that the value of the outsourcing deal is conditioned on the degree of information asymmetry existing in the market. According to this study the capital market placed a higher value on outsourcing announcement information for higher asymmetry firms (i.e. small firms). Similar size effect has been reported also by Hayes et al. (2001) and Gao (2005). The impact of outsourcing firm's profitability on the market reaction has not been studied before and therefore the statistically strong result found in this study provides new insights into the capital markets reaction on outsourcing announcements. The hypothesis that higher agency costs of outsourcer would lead to more positive market reaction to outsourcing announcements does not receive any empirical support. Finally, the hypothesis related to the rationale for outsourcing, growth opportunities, type of announcement and contractor experience were not supported by the empirical evidence.

Similarly to the outsourcers, also among contractors there exist significant differences with regard to the capital market's reaction to outsourcing announcements. Based on the statistical evidence the market reaction of contractor of information technology or electronic manufacturing outsourcing deal is strongly conditioned on the size of the outsourcer and on the size and structure of the outsourcing deal. The empirical support for the significance of these three variables is strong. The reliability of these findings is reinforced by the fact that the relationship between market reaction and contractor size and deal size were statistically highly significant both in Gao's (2005) and in this study. The impact of outsourcing structure has not been studied earlier and therefore the significant positive impact of alliance structure found in this study is an interesting result warranting additional research to understand better the underlying mechanisms for this result.

This study also has limitations, which should be considered when interpreting the results and drawing conclusions. Some of these limitations are related to the event study methodology

and some to the data gathering. One of the main challenges in applying event study methodology is the different information release possibilities as a result of rumours and varying disclosure patterns. This is particularly challenging when examining outsourcing announcements since there are no mandatory rules covering the disclosure of outsourcing contracts. For this reasons several event windows have been used. Main challenge with the data is that it will naturally be biased towards bigger deals due to the reliance on publicly available data and different news services. Nevertheless, these limitations are not considered to significantly undermine the value and applicability of the findings.

1.4. Structure of the study

The balance of this thesis is organized as follows. Chapter 2 is a literature review of the most relevant empirical and theoretical research on outsourcing and make or buy decision. Chapter 3 reviews the hypotheses that are examined in this thesis. Chapter 4 provides an overview of the data and methodology. Chapter 5 presents the results of the empirical work and analyses the interpretations of the findings. Chapter 6 concludes the paper with an overview of the central results and suggests potential avenues for further research.

2. Literature review

2.1. Introduction to outsourcing

Outsourcing occurs when activities such as information technology (IT) management, finance and accounting services or manufacturing are switched from internal provision to provision by external contractor (Juma'h and Wood 2003). Usually outsourcing involves a long-term service contract that is less permanent than total disposal of an activity (Juma'h and Wood 2003) According to Lacity and Hirschheim (1993) outsourcing, in its most basic form, can be conceived as the purchase of a good or service that was previously provided internally. Finally, according to Gellrich and Gewald (2005) outsourcing is generally defined as the transference to external parties the performance of functions otherwise administered in-house. It is an agreement in which one company contracts a part of its ongoing activity to another company.

What renews the interest especially in IS outsourcing and demands the attention today is the dramatic change in the scope. For example, early forms of IS outsourcing involved single system contracts comprising a small portion of the IS budget – payrolls, insurance processing, credit cards or mailing lists. Outsourcing has recently grown to span multiple systems; it now represents a significant transfer of assets, leases, and staff to a vendor that assumes profit and loss responsibility. A typical outsourcing arrangement of this type works like this: the vendor charges a fixed fee for a prespecified number of services know as the baseline. The customer is guaranteed that its IS costs for this baseline will be fixed over the contract duration, typically five to ten years. During the contract period services not included in the baseline may be purchased form the vendor for an excess fee. Deals are often sweetened with financial incentives, such as stock purchases, loans at low interest rates, and postponed payments. At the outset these deals may be extremely attractive, especially to an organization that suffers financially (Lacity and Hirschheim 1993).

2.2. Theories and Hypothesis in Connection with the Outsourcing Decision

Outsourcing can be framed as a "make-versus-buy" decision facing a firm. In its generic form it has been studied in several settings. Researchers have used interviews and questioners to study managers' perceptions and motivations of outsourcing, what they choose to outsource

and why they choose to outsource (McLellan et al. 1994; McLellan et al. 1995). There are also several purely theoretical papers discussing the possible determinants of outsourcing or vertical integration decision and these papers suggest several different economic and strategic reasons why firms outsource their operations. Some studies analyse specific outsourcing cases, such as the one of Continental Bank (Huber 1993). Some studies have used publicly available data regarding IS outsourcing announcements in order to test a model of the determinants of information technology outsourcing (Loh and Venkatraman 1992a; Loh and Venkatraman 1992b; Smith et al. 1998) whereas others have used information obtained by interviews and questioners in order to test the determinants of the manufacturing outsourcing (Lyons 1995; Walker and Weber 1984; Monteverde and Teece 1992; Lieberman 1991). The theoretical base of much of the research rests on Williamson's models of transaction costs (Williamson 1979; 1985; 1989; 1991) and this theoretical structure has been used in a number of above-mentioned empirical studies exploring the characteristics of the companies choosing outsourcing (or in-house production). The Williamson's model is explained later along with the introduction to its empirical testing. There appears to be only a few studies examining the market reaction on outsourcing announcements using event study methodology. These studies are often limited by small sample size, IT outsourcing focus, and narrow set of explanatory variables.

The studies on outsourcing can broadly be divided into four groups (Lee et al. 2000; Roy and Aubert 2002): the ones with an economic view, such as the Williamson's transaction cost approach, the ones with social view, the ones with strategic management orientation and finally the ones with resource based view. Furthermore, one can classify the research according to the methodology, that is to say, the research can be divided into qualitative and quantitative studies. Economic, strategic and resource based views are presented in this study due to their use in the hypothesis formulation. In addition to the theory of vertical integration and outsourcing, two theories from the field of behavioural finance, sunk cost bias and hubris theory, are presented and linked to the outsourcing decision and later to hypothesis formulation. Behavioural finance introduces a new view to the discussion on outsourcing as the other views assume managers to always act rationally.

2.2.1. Economic view

The issues surrounding outsourcing have been most frequently studied with the tools provided by organizational economics (Lyons 1995; Walker and Weber 1984; Monteverde and Teece 1992; Lieberman 1991; Grossman and Hart 1986; Vining and Globerman 1999). These studies are based at least partially on the works of Williamson (Williamson 1979; Williamson 1989). The main idea of these studies is that firms are more likely to outsource activities that are predictable and easy to measure. They also indicate that activities, which require the use of specific assets, should be managed in-house, in order to avoid the risk of lock-in with the supplier. The studies in this group are mainly concerned with the factors, which could lead to increased transaction costs i.e. contractual problems and reduce market efficiency. It is assumed that market i.e. outsourcing is the default position and if the market efficiency is reduced and the cost of using market (i.e. the cost of outsourcing) increase too much, the organization should vertically integrate. These approaches omit the strategic motivations and unique internal production considerations.

2.2.1.1. Transaction cost paradigm (Williamson's model)

This section first introduces the transaction cost paradigm and then the empirical research related to this theory is presented. Finally, some extensions and contradicting or complementing views to Williamson's model are presented.

Williamson (1979, 1985, 1989) develops so called 'heuristic' model for understanding the vertical boundaries of the firm i.e. the level outsourcing. His simplified model examines the make-or-buy decision for a fixed output of a component used in fixed proportions and made with a technology of exogenous asset specificity (k). Williamson's model contains two different cost components, namely, governance cost difference (ΔG) between the bureaucratic costs of internal governance and the corresponding governance cost and the economies of scale or scope advantage (ΔC) of outsourcing as compared with in-house production. According to the model these two variables are both dependent on asset specificity (k). The governance cost is considered first. In the absence of specific assets ($k=0$), Williamson argues that market based organization is favored because high powered profit incentives, necessary to minimize costs and optimize innovation, cannot be fully preserved within a unified firm. On the other hand, if $k>0$, then assets are specific and, once such investments have been

made, suppliers leave themselves vulnerable to opportunistic recontracting. As Williamson (1985, p.91) puts it: 'market procurement is the preferred supply mode where asset specificity is slight – because of the incentive and bureaucratic disabilities of internal organization in production and cost control respect. But internal organization is favored where asset specificity is great, because a high degree of bilateral dependency exists in those circumstances and high-powered incentives impair the ease with which adaptive, sequential adjustments to disturbances are accomplished'. Although writing complex, contingent, long-term contracts can mitigate this opportunism, this will be prohibitively costly in the presence of uncertainty (Williamson 1979). In addition to the cost of writing these contracts, hard contracting may well give rise to veridical disputes as changes in the states of world as ambiguous and not all contingencies for which adaptations are required can be anticipated (Williamson 1979). This may result in risk premium added to the price, or a failure to make the appropriate investments. Either way, as the costs of using the market rise, the organizational balance is moved in favor of in-house production. Thus ΔG is decreasing function of asset specificity, positive where asset specificity is low and negative where asset specificity is high.

A second line in Williamson's argument is that market is able to aggregate demands, and so achieve economies of scale or scope, which are unavailable within the firm (Williamson 1979; Williamson 1989). Importantly, this advantage for the market is also related to the asset specifity (k). Again, in the absence of specific assets, there is no constraint on the demand aggregation and this gives external production a considerable edge in achieving lower production costs. As technologies come become more specific, the aggregation of demands from different firms generates fewer savings. This analysis begs the question of why firms do not produce in-house and sell their excess supplies into market. However, the problem is that the market consists, at least partly, of downstream rivals, who fear opportunistic manipulation of their supplies (Lyons 1995). Thus ΔC, defined as the unit production cost difference for a given demand by the downstream firm, is a positive, decreasing function of k, asymptotically approaching zero.

Finally, the net cost of in-house production in the presence of economies of scale or scope is $\Delta G+\Delta C$ and the critical level of asset specificity determining the make-or-buy decision, rises to k^, where $\Delta G+\Delta C$ equals to zero.

The basic implications of Williamson's transaction cost theory have been tested in several settings. There is body of US evidence supporting the hypothesis that specific production technology correlates with in-house production (Anderson 1986; Monteverde and Teece 1982). Lieberman (1991) assesses both transaction costs and demand variability as factors jointly deciding whether companies integrate backward or not. Walker and Weber (1984) tested transaction costs and two types of variability, demand and technological as possible factor affecting the make-or-buy decision. Finally, Lyons (1995) tests the interaction of economies of scale and specificity as a factor explaining the outsourcing decisions.

Both Anderson (1986) and Monteverde and Teece (1982) found empirical support for the transaction cost approach to the study of vertical integration. Andersen (1986) showed that high asset specificity, uncertainty, and their interaction were associated with the decision to sell through internal sales force rather than through independent marketing representatives. Monteverde and Teece (1982) studied component production by General Motors and Ford and found strong effect, in the predicted direction, of asset specificity on backward integration. They hypothesized that assemblers will integrate vertically when the production process, broadly defined, generates specialized nonpatentable know-how and are therefore exposed to the possibility of opportunistic recontracting. These two studies are focused on the asset specificity that is the degree to which the value of investment is tied to continuing trade between a particular pair of traders. The asset specificity is the key factor that makes transaction theory testable. Given that bounded rationality prevents the writing of complete, contingent contracts, in-house production may be the only way to protect transaction specific investments from opportunistic behaviour due to the lock-in effect. This focus on asset specificity, however, ignores a second important characteristic relevant to make-or-buy decision, namely, economies of scale or scope. The trade-off between asset specificity and economies of scale or scope is central to the transaction cost theory of vertical integration. Lyons (1995) studies the effect of economies of scale and scope in addition to asset specificity using interview data from 102 different UK engineering firms i.e. using cross-sectional data. He also studies the interaction between asset specificity and economies of scale. He finds out that the probability of buying-in specialised inputs is higher if the production technology is non-specific, but only if there are economies of scale or scope. Furthermore, the effect of economies of scale or scope is reduced in the presence of specific assets. These findings were consistent with Williamson's transaction cost theory.

Walker and Weber (1984) tested the influence of transaction costs on the make-or-buy decision indirectly through the effects of supplier market competition and two types of uncertainties, volume and technological. In addition to these, the decisions were hypothesized to be predicted by both buyer production experience and the comparative production costs between buyer and supplier. Their data consisted of 60 decisions made in component division of a large U.S. automobile manufacturer over a period of three years. The results showed that comparative production costs are clearly the strongest predictor of make-or-buy decision and that both volume uncertainty and supplier market competition have small but significant effects. They used a structural equation system model and the direct effects of competition and buyer experience on make-or-buy decisions were proxies for the influence of transaction costs due to variations in asset specificity. Economies of scale was one of the main components explaining the comparative production costs. In general, the effect of transaction costs on make-or-buy decision was substantially overshadowed by comparative production costs.

Lieberman's paper (1991) considers both the transaction costs and demand variability as possible factors affecting the make-or-buy decision at the level of individual plants and firms. His data consists of 34 US producers of chemical products. His results are consistent with the transaction cost theories and demand variability model, suggesting that both transaction costs and demand variability are both important determinants of integration in the chemicals manufacturing sector. Lieberman tested three hypotheses in relation to the likelihood of integration as implied by the transaction cost theory. The results support the hypothesis that firms integrate to avoid problems of lock-in that may arise from large sunk investments and the hypothesis that the larger the fraction of total cost represented by the input, the higher the probability of backward integration. Of the three demand variability hypothesis, only the one derived from the Carlton (1979) model was supported by the data: firms integrate backward when they encounter substantial variability in the input market that is uncorrelated with fluctuations in their own downstream market.

2.2.1.2. Extension on the transaction cost theory

Vining and Globerman (1999) provide a theoretical framework to be used in real and potentially complex firm's outsourcing decisions. Their framework extends some of the key

concepts of the Williamson's transaction cost theory by further analysing the costs that arise with outsourcing and is therefore presented here. Vining and Globerman (1999) argue that three types of costs are relevant in the choice between internal production and outsourcing: production costs, bargaining costs, and opportunism costs, with the latter two being costs of governance (compare to transaction costs).

Production costs are either the costs of internal production or the direct purchase price. Bargaining costs are further divided into four categories: costs arising from negotiating contract details per se, the costs of negotiating changes to the contract in the post-contract stage due to unforeseen circumstances, the costs of monitoring the performance of the vendor and the costs of disputes which arise if neither party wishes to utilize pre-agreed resolution mechanisms. These bargaining costs arise when both parties are acting with self-interest, but in good faith (Williamson 1985; Vining and Globerman 1999). Since bargaining within organizations can also be costly (e.g. wages or internal transfer prices) it is the incremental bargaining costs of outsourcing that are relevant. Opportunism differs from bargaining costs, since opportunism costs arise when at least one party acts self-interestedly, but in bad faith. Opportunism is any behaviour by a party to a transaction designed to change the agreed terms of a transaction to be more in its favour. Opportunism is more likely in outsourcing contexts than in transactions within organizations, since the distribution of profit is more relevant in dealings between organizations. However, opportunism can also occur within organizations and therefore it is the incremental opportunism costs of outsourcing that are relevant. Furthermore, opportunism is usually considered to be more likely after the outsourcing.

Vining and Globerman (1999) argue that production costs may be lower with outsourcing for a number of reasons. This is consistent with Williamson's model. First, it is argued that outside vendors could better achieve quality adjusted minimum efficient scale by selling to multiple outsourcing buyers. This is supported also by McLellan (1995) who found out that major rationale for the significant degree of IS outsourcing in banks is the inability to achieve minimum efficient scale in either installing, updating, or managing these systems. Second, there is a tendency for internal production units to act like monopolists and this reduces the comparative performance benchmarks for internal customers and the likelihood of efficiently priced goods (Vining and Globerman 1999). Third, firms can experience diseconomies of scope in management of multiple firm activities. This is linked to the idea of focusing on core competences and outsourcing other activities proposed by Prahalad and Hamel (1990).

Fourth, internal production of an input may generate significant organizational externalities that can be reduced or eliminated by outsourcing. Vining and Globerman (1999) also provide some evidence from variety of sources that outsourcing can lower production although they mention that relatively little of the empirical evidence comes from contexts where firms outsource to other firms. Empirical studies concerning governments outsourcing to private suppliers tend to find production cost savings in the 20-30 per cent range, especially if competitive bidding is used (Walsh 1991). McLellan (1995) has also found out, when interviewing managers of US banks, that on average, 19% reduction in IT costs was achieved in the first year and this was expected to increase in subsequent years.

According to the framework of Vining and Globerman (1999) there are three major factors that are likely to determine the sum of bargaining and opportunism costs: product/activity complexity, contestability and asset specificity. This idea is strongly related to the Williamson's original transaction cost theory and the effect of asset specificity on transaction costs and economies of scale. Product or activity complexity defines the degree of difficulty in specifying and monitoring the terms and conditions of a transaction. Vining and Globerman argue that products, services or activities can be divided into search goods, experience goods and post experience goods depending on when the price performance characteristics can be observed and this categorization can be linked to the product/activity complexity. The degree of product/activity complexity then determines largely: the uncertainty surrounding the contract, the potential for information asymmetry and the probability that there will be externalities that will affect the firm's other activities, which are all factors that can raise both the bargaining and opportunism costs. As an example of empirical evidence of this effect Masten (1984) found that in the aerospace industry the more complex the components are the more likely they are produced internally than to be outsourced.

A contestable market is one where only a few firms are immediately available to provide any given service but many other firms would quickly become available if the price paid by the outsourcing firm exceeded the average cost incurred by contractees. The degree to which the activity being outsourced is contestable affects opportunism costs. If the market for the activity is contestable, opportunism is reduced at the contract stage and potentially also at the post-contract stage. Vining and Globerman (1999) also point out that contestability is also dependent on the capability of the firm to bring back the service back in-house if necessary.

Asset specificity was the third determinant of the level of bargaining and opportunism costs and it has already been discussed earlier when Williamson's model was presented. As already mentioned there is also extensive evidence suggesting that asset specificity reduces the degree of outsourcing.

In summary, the framework of Vining and Globerman (1999) complements and extends Williamson's transaction cost theory by categorizing the transaction costs into bargaining and opportunism costs and by providing additional determinants (in addition to the asset specificity) on the level of these two components of transaction costs.

2.2.2. Strategic view

The studies with strategic view provide information on the strategic impact of outsourcing and how outsourcing can help firms reach their strategic goals. These studies consider the strategic implications of the outsourcing decisions, and their long-term impact on the firm. While the economic view, and especially the transaction cost theory, suggests that firms' outsourcing decisions should be driven by singular focus on reducing the total cost of the activity, which is dependent on the economies of scope and transaction costs, the strategic view takes into account a broader set of factors.

McLellan et al. (1995) studied the motivations behind IS outsourcing and especially focused on the observation that IS outsourcing is taking place also within firms and industries where the IS functions have been considered core to the success of business. They argue that according to the popular alliance theories such as transaction cost theories and joint-venture alliance theory the firms should not outsource an activity if core competency would be lost. Therefore, they argue that several strategic motivations are needed to explain the management decision to outsource IS (in the contradictory stance of outsourcing core competency) even when it is considered core. More precisely, they found out that in addition to financial motivations the firms were undertaking IS outsourcing in order to gain competitive advantage, change the organizational boundaries, to restructure, to mitigate technological risk and uncertainty as well as to get access to new technologies, to manage IS departments better and to link business and IS strategy. Their sample consists of seven large outsourcing alliances in the banking industry, which they study using an in-depth case method and

interviews. The banking industry was chosen since the contradictory stance of releasing core competency has been observed particularly in that industry (McLellan et al. 1995; Roy and Aubert 2002)

The results of McLellan et al. study showed that in addition to strategic motivations financial motivation definitely existed for firms which explored IT outsourcing as the financial motivation was expressed very strongly by all parties involved in the case studies. The financial savings in an outsourcing relationship represented a significant decrease in costs for the outsourcing company. On average, McLellan et al. found a 19% reduction in IT costs in the fist year. IT is very important skill in the financial sector, and therefore also an important expenditure, as it represents more than 8% of the non-interest costs of the studied companies. The average cost savings realized form the outsourcing arrangements were therefore estimated to result in an average profitability increase of more than 10%, which can be considered significant.

The strategic rationale for information technology outsourcing has also been studied empirically, using publicly available financial data, at least by Loh and Venkatraman (1992a) and Smith et al. (1998). In the following, a brief description of both is provided.

A major piece of work by Loh and Venkatraman (1992a) begins to offer an empirically supported framework for understanding why companies enter into IT outsourcing. They develop a model of the determinants of IT outsourcing and tested their model based on a sample of 55 companies (all large users of IT). Loh and Venkatraman (1992a) hypothesize that IT governance and outsourcing is dependent on the structural characteristics of the user organization, particularly business competence (business cost structure and business performance), business governance (financial leverage) and IT competence (IT cost structure and IT performance). Furthermore, they posit that lower IT and business competence lead to more IT outsourcing activities. The empirical results provided general support for their research model. Specifically, they found out that more IT outsourcing was occurring in organizations that had higher business costs, higher IT costs and lower IT performance. They also hypothesized that business performance and financial leverage might prompt companies to undertake IT outsourcing but did not find that these two factors were significantly related to more outsourcing activities.

Smith et al. (1998) classified the drivers of IS outsourcing into five categories: cost reduction, focus on core competence, liquidity needs, IS capability factors and environmental factors. They seek empirical support for these key drivers by comparing the financial characteristics of firms that enter into large-scale IS outsourcing agreements with those of other firms in their respective industry prior to outsourcing. Their sample included only 29 outsourcing contracts between 1988 and 1994, which limits the reliability of the results. Their results indicate that outsourcing firms differ from their industry counterparts in two major ways. First, outsourcing firms have a significant cost focus, typically associated with high debt burden, declining growth rates and lower overhead expense ratio. Second, they have a greater need to generate cash, mainly due to high and maturing debt (future cash payments) and lower cash reserves. Based on these findings, Smith et al. (1998) concluded that firms enter into large-scale IS outsourcing announcements primarily to reduce costs and to generate cash. Furthermore, they found no evidence that outsourcing was a part of larger organizational effort to focus on core competencies.

The above mentioned empirical studies on the characteristics of outsourcing firms both conclude that firms having greater need to reduce costs are more prone for IS outsourcing. However, the individual findings are completely contrary. Loh and Venkatraman (1992a) found a positive and statistically significant relationship between cost structure (cost of goods sold and selling, general and administrative expenses divided by net sales) and the level of outsourcing, whereas Smith et al. (1998) found out that companies, which have outsourced their IS typically have lower overhead cost structure. Smith et al. explained that the lower overhead cost structure to be a direct evidence of cost focus. On the other hand, Loh and Venkatraman (1992a) state that a high level of business cost structure motivate a firm to review its overall cost structure, including the cost of its IS infrastructure. Both studies also examined the impact of financial leverage. Smith et al. (1998) found a positive correlation between the leverage of the company and outsourcing activity, whereas Loh and Venkatraman (1992a) did not. Other propositions and variables that were tested differed between these studies and thus further comparisons are not possible. All in all, it appears that these empirical studies support traditional economic considerations, i.e. cost reduction, as the major drivers of outsourcing decision, whereas more strategic and long-term objectives, such as focus on core competence were not supported. However, the results are not particularly reliable and extensive due to limited sample size and number of characteristics studied. Furthermore,

many firm characteristics that may shed light on the motivations for outsourcing were only described indirectly, as the studies rely on publicly available financial data.

In another study, Venkatraman et al. (1992b), investigated the diffusion of IT outsourcing at an organizational level by using longitudinal data on the patterns of diffusion among outsourcing announcements. They found out that since the Kodak announcement to outsource the communication topics within the social system of the industry and the mimicking behaviours appeared to be increasing the rate and level of adoption of IT outsourcing.

2.2.3. Resource based view

The resource based (Roy and Aubert 2002) view on make-or-buy decision looks at the resources required to perform the activities and at the strategic value of these resources. It considers specific constraints associated with acquiring and maintaining strategic resources. The resource-based view provides an explanation to understand why firms do obtain strategic advantage and are able to keep it although in the world of perfect competition, there should be no competitive advantage. They give a framework to assess whether an activity should be kept within the firm or given to a supplier by focusing on the strategic resources that firms develop and nurture. The key elements on which this framework of resource-based theory is constructed are deviations from the perfect market environment. Resource based theory argues that, in many situations, three hypotheses of a perfect market are not met: the firms are constrained by their past choices (history matters), the resources are not perfectly mobile, and expertise is not easy to reproduce or imitate. Roy and Aubert argue that information systems sourcing decisions can be explained in relation to the resources the firm has in its possession and the strategic value of those resources as measured by the strategic value of the system itself. They theorized that it is the interplay between these two factors that will best explain why, under certain circumstances, a company will choose to keep the development of a highly strategic system in-house and why, under another set of circumstances, it will seek outside assistance. In a general way, from the perspective of the resource-based approach, the less the appropriate resources are present within the firm, the more the firm will seek to overcome this weakness by calling upon external expertise. External partners may be the only way to have access to the expertise, because of the relative immobility and the difficulty to imitate, as discussed above. On the other hand, the lower the strategic value of these resources, the more

the company is justified in parting with them through outsourcing. Thus, Roy and Aubert argue that interactions between these two factors (presence of appropriate resources and strategic value), depending on whether they simultaneously take values located on a high-low continuum, should have a foreseeable impact on the sourcing mode chosen. Therefore their framework complements the economic view by introducing new non-economic, resource-based, dimensions to the make-or-buy decision. Roy and Aubert also argue that especially IT applications developed in banks are more likely to have strategic value, which is closely related to the view of McLellan et al. (1995, p.300) who argue that 'the strategic reasons explain the contradictory stance of releasing a 'core' competency, which has been observed in the banking industry' in their discussion of IS outsourcing. Furthermore, McLellan et al. theorized that alliance governance structure that is the base of many of the most comprehensive IT outsourcing relationships in banks made it possible to outsource IT even when it is considered core skill. This idea is fairly consistent with the framework of Roy and Aubert, since according to them, IT applications developed in financial institutions are more likely to have strategic value and should therefore be governed through partnership (i.e. outsourced in close co-operation with the outside supplier), in the case of low or medium presence of these resources.

2.2.4. Sunk cost bias

Roodhooft and Warlop (1999) present an idea that managers are inappropriately sensitive to the sunk costs inherent in most real-life outsourcing decisions, and may therefore underengage in outsourcing. They argue that in practice, outsourcing is not a make-or-buy decision, but involves a switch from internal production to external production. Due to this prior commitment to internal procurement the willingness to outsource is systematically reduced, relative to pure make-or-buy decision. They conducted a field experiment with managers of 156 health care organizations in Belgium, which supported their hypothesis.

According to standard investment analysis, any historical investments in a current make activity are to be treated as sunk costs since they incurred in the past, are not changed by today's alternative actions, and should therefore be ignored. Only future and relevant cash flows should be taken into account. Research psychology, however, demonstrates that individual decision makers are not immune to sunk cost biases (Arkes and Blumer 1985).

Sensitivity to these sunk costs often lead to perseverance or even escalation of normatively inappropriate courses of actions. These effects have been shown in tasks that are related to various business functions (Bazerman et al. 1982; Garland and Newport 1991). Therefore, Roodhooft and Warlop (1999) propose that presence of a sunk historical investment in the current make activity reduces the likelihood for outsourcing.

There are several potential reasons for the reluctance to engage in outsourcing. First, it has been recognized that the inclusion of sunk costs in a decision can result from information asymmetry within an organization where middle managers possess privately held information and have incentives to shirk (Harrell and Harrison 1994; Harrison and Harrell 1993; Kanodia et al. 1989). Roodhooft and Warlop (1999) argue that outsourcing decisions can be postponed for similar reasons: managers may have incentive to withhold or distort information that would favour outsourcing, thereby threatening their own power base within organization. Some reasons for the sunk cost bias are based on the individual psychology of the decision maker. Managers who have been responsible for the past make decisions may avoid outsourcing simply because it would create the appearance that they are trying to correct a prior mistake. These managers would be reluctant to create such an impression, either because they see it as a threat to their perceived competence by the other members of the organization (Brockner et al. 1981) or even because it would constitute a threat to their self esteem. Finally, Arkes and Blumer (1985) provide another different explanation to the sunk cost bias. Based on their empirical results, they hypothesized that many sunk cost biases may be explained by the mere desire not to be wasteful.

In summary, while some accounting researchers have argued that companies are overly committed to outsourcing and underestimate potential drawbacks that occur due to the transaction costs (Chalos 1995), Roodhooft and Warlop provide a different perspective since according to their results managers do take asset specificity into account and that they are even more conservative than they should be, by incorporating sunk costs as well.

2.2.5. Hubris theory

In a classic study, Roll (1986) introduces the hubris hypothesis of corporate takeovers. In his study, Roll (1986) found that acquiring companies often perform worse than the market after a deal, and that the motivation for the purchase thus could not rationally be stock price appreciation. The hubris hypothesis is advanced as an explanation of corporate takeovers. According to Roll (1986) hubris on the part of individual decision makers in bidding firms can explain why bids are made even when a valuation above the current market price represents a positive valuation error. Bidding firms infected by hubris simply pay too much for their targets. This is a result of the fact that the exact amount of cost advantages and synergies are not known in advance of the deal but rather management estimations are distributed around the true amount. The ones that overestimate the savings and synergies are likely to bid more than others and even more than would be rationale. Therefore, part of the deals that come true are a result of upward bias by the decision makers of bidding firms, thus explaining the weak stock market performance after the deal.

In a similar way, companies and managers that decide to outsource do so partly as a result of upward bias in their estimates. Exact amount of outsourcing costs and benefits is difficult to assess in advance and therefore estimates can be considered to have a distribution around the true value. Again, managers and companies, that have overestimated the benefits from outsourcing are more likely to outsourcer their operations. Thus, part of the announced outsourcing contracts are a result of upward bias by the decision makers and not based on the true cost and other benefits, having implication on the market reaction. I assume that markets overall consider outsourcing to be value adding, when discussing the implications on the market reaction. If markets anticipate this type of hubris to exist, then the overall market reaction to outsourcing announcements should be less positive (or even negative) compared to case without hubris. In case markets do not anticipate hubris to exist, the market reaction at the announcement event will not be impacted by possible irrational behaviour of companies and managers but rather the performance of the outsourcer after the deal will depend on the true economics of the contract.

It could be argued that the same hubris applies also to the contractors and their management. In a similar way, contractors try to assess the costs and revenues of the potential outsourcing

deal before committing to it. If they underestimate the costs of the deal they may assign too low price for their services thus benefiting the outsourcer. In a way, hubris on contractors' side offsets outsourcers' hubris. However, contractors are likely to possess informational advantage over the outsourcers, when assessing the true costs of the outsourcing deal. The assessment of outsourcing related costs and designing outsourcing contracts is contractor's main business and they have a lot of experience from these activities. Additionally, contractors are assessing the costs of functions/operations that are core to them, whereas in many cases outsourcers consider these to be support functions. As a result contractor's estimates are likely to have lower standard deviation compared to the outsourcer. Consequently, I assume that outsourcers' hubris is dominant.

2.2.6. Summary of theories explaining the make or buy decision

The above section describes earlier studies related to the question, why firms outsource. The discussion starts with the description of the classic Williamson's transaction theory. His simplified model examines the make-or-buy decision by focusing on reducing the total cost of the activity, which is dependent on two variables: the economies of scale and scope and transaction costs. Next, empirical tests supporting Williamson's theory are presented. After this, some complementing and to some extent contradicting views to Williamson's model are discussed. Firstly, the paper by Vining and Globerman (1999) is presented as it extends Williamson's transaction cost theory by categorizing the transaction costs into bargaining and opportunism costs and by providing additional determinants on the level of these two components of transaction costs. Then, resource based view on outsourcing decision is introduced. Roy and Aubert (2002) developed a framework, which complements the economic view by introducing new non-economic, resource-based, dimensions to the make-or-buy decision. Finally, two theories from the field of behavioural finance are presented and linked to the outsourcing decision. The basis for behavioural finance theories is the assumption that managers and corporate decision makers are not always rational, thus impacting their decision making process. Therefore, behavioural finance introduces a new view to the discussion on outsourcing as the other views assume managers to always act rationally. First, sunk cost bias and its implications to the decision to outsource is discussed. This discussion is based on the ideas of Roodhooft and Warlop (1999) saying that managers are inappropriately sensitive to the sunk costs inherent in most real-life outsourcing decisions,

and may therefore underengage in outsourcing. Secondly, hubris theory by Roll (1986), which was originally used to explain corporate acquisitions, is presented. Hubris theory has not previously been discussed as a driver of outsourcing. Nevertheless, the main idea of hubris applies to any major corporate decision with uncertain benefits and costs and is thus discussed here in connection with outsourcing decision. These theories are later used when developing hypothesis on the overall market reaction of outsourcing announcement. Additionally, they are used to formulate more specific hypothesis related to the magnitude of the market reaction.

2.3. Studies with evidence on shareholder wealth effects

There appears to be only a few studies examining the market reaction of outsourcing announcements using event study methodology. Additionally, these studies are often limited by small sample size, IS outsourcing focus, and narrow set of explanatory variables. Typically, these studies have focused on two questions: (1) Do outsourcing announcements affect the market value of the firm in terms of producing abnormal stock returns? (2) What factors explain the observed variance in the market reaction to outsourcing announcements? With respect to the first question, the results reported by previous event studies have been mixed. Some have found a positive and significant association, while others have found an insignificant relationship between outsourcing announcement and the market value of a firm. The second question typically attempts to explain the inconsistent impact of outsourcing announcements on investors' reactions. In the following I highlight the most important ones and give a brief summary of their key findings and conclusions.

Hayes et al. (2000) examine the market reaction to 77 IS outsourcing announcements between 1990 and 1997. Their study provides evidence that the market values of firms are positively affected by IS outsourcing announcements. In their study they had two main hypotheses. First, they hypothesized that the impact of IS outsourcing announcements will have a greater positive impact on the market values of smaller firms than on the market values of larger firms, due to the information asymmetry between these two groups of firms. Announcements made by small firms are expected to yield a greater market response because of the bigger surprise they generate. Small firms tend to be followed less closely by the media and analysts than are large firms, so there is less public information available about small firms. Second,

the impact of IS outsourcing announcements will have a greater positive impact on the market values of service firms than on the market values of non-service firms. According to Hayes et al. the two reasons for this are information asymmetry between service and non-service firms, due to the inability of the financial-reporting systems to capture many factors important to service industry, and the fact that service firms allocate a higher proportion of their resources to information technology. Therefore, they argue that the market should place greater values on outsourcing announcements related to service firms. Hayes et al. (2000) do not give a detailed explanation on the reasons why higher proportion of IS investments should lead to stronger positive reaction to outsourcing announcements. However, they mention greater economies of scale and scope offered by IS outsourcing as one of the factors. Counterhypothesis for this could be that since service firms typically allocate a higher proportion of their resources to information technology, they have less to gain from outsourcing, e.g. due to larger existing internal economies of scale. Additionally, they do not include deal size into their regression model, although this could potentially have an impact on the size and sign of the market reaction. Since service firms allocate higher proportion of their resources to information technology they are likely to have larger outsourcing contracts. Therefore, it is possible that the service firm dummy that Hayes et al. (2000) use acts as a proxy for the deal size, at least partly explaining the results obtained.

Their study provides evidence that the market values of firms are positively affected by IS outsourcing announcements, although this reaction is dependent on the size and industry of the firm. For a one-day window, including only the day after the announcement day, there are statistically significant positive abnormal stock returns for both small firms and service firms but not for the whole sample. For a two-day event window, including the announcement day and the next day, there is no statistically significant stock price changes of outsourcers for the whole sample, but weakly significant positive stock returns for small firms exists. Finally, their multivariate regressions provide further support of the size and industry impact on outsourcer's announcement period abnormal returns.

A more recent study by Juma'h and Wood (2003) examines the sample of 84 business service outsourcing announcements made by UK quoted companies between 1991 and 1997. They hypothesized that the market reaction of business process outsourcing announcements should be positive as a result of two main factors. Firstly, business service outsourcing announcements are one of the few signals a management can give to demonstrate that

activities failing to cover their opportunity cost will be eliminated. Secondly, as outsourcing announcements are increasing rapidly, the contractors are continuously building scale and scope advantages to increase their competitiveness against in-house production. In their study, Juma'h and Wood (2003) concluded that initial announcements tend to enjoy positive and significant reaction based on significant excess returns for most time windows before the announcement (including the announcement day), consistent with the findings of Hayes et al. (2000). They also studied the effect of multiple announcements and found out that the mean excess returns across the total sample and most event windows were positive, though insignificant.

Juma'h and Wood (2003) also tested if the stock market reaction is influenced by the size of the outsourcer and the industry classification. Specifically, they divided the data into larger and smaller companies and found out that the larger companies in the sample show a more positive reaction than smaller companies. In this respect, their findings were contradictory with the findings of Hayes et al. (2000). They hypothesized the difference to be due to two reasons. Firstly, investors react more favourably to the outsourcing announcements of larger companies, since these companies have more power when negotiating with the service suppliers and are therefore able to obtain better contract. Secondly, outsourcing announcements of larger companies include more detailed information that may also increase the investors' positive reaction to these outsourcing announcements. They did not found solid indication that stock market reacts differently for financial and non-financial outsourcing companies announcements.

Juma'h and Wood (2003) also draw interesting conclusions on the signalling effect of the outsourcing announcements based on comparison of the market reaction and deal value. They found out that market reaction (in percentages of the market value) is higher than the total size of the deal in most of the event windows before the announcement. According to Juma'h and Wood (2003) this supports the intuition that outsourcing announcements signal to shareholders that shareholder value maximization is overriding managerial objectives related to firm size and employment.

Oh and Gallivan (2003) examined the market reaction to 97 IT outsourcing announcements between 1998 and 2001. Their study uses stock market reactions to assess various risks associated with IT outsourcing. They also studied the overall market reaction to IT

outsourcing announcements. Specifically, they test the extent to which sources of IT outsourcing transaction risks, including asset-specificity, resource dependency, technological discontinuity and performance monitoring, influence investors' reactions to IT outsourcing announcements. They used deal size as a proxy for the resource dependency and deal length for technological discontinuity. Asset specificity is based on the transfer of patented technologies or other proprietary innovations. They also assumed that outsourcing decisions aiming to cut costs or improve operational efficiency is relatively easier to monitor relative to outsourcing decisions based on revenue enhancing opportunities.

Their results provided only weak evidence (at the 10% significance level) with respect to investors' positive reaction to IT outsourcing announcements using two-day event window (including announcement day and the day after that). Further analysis revealed that asset specificity and the size of the contract are negatively correlated with investors' reactions as measured by cumulative abnormal returns of the stock price. However, contract duration and cost cutting focus were not significantly associated with the market reaction.

Gao's (2005) study of outsourcing transactions has so far the largest sample size of all the outsourcing event studies. Gao (2005) examined the market reaction of 341 outsourcing transactions of US firms between 1990 and 2003. Contrary to the most of the previous studies, he examined also contractors' market reactions to outsourcing announcements. Furthermore, he included also other types of outsourcing transactions in addition to the IT outsourcing transactions, which have been the focus in all the above mentioned studies.

The results from Gao's (2005) study are consistent with his hypothesis, i.e. for outsourcers as a group, there are no statistically significant value changes around event announcement days. However, when the outsourcers are grouped into sub samples statistically significant abnormal returns are found. Specifically, Gao (2005) divides outsourcers into high Q and low Q groups, and found out that there is statistically significant positive abnormal returns of 1.21% for the low Q client firms at the 5% level on contract announcement day, and 1.28% positive abnormal returns at the 5% significant level around the two-day window, whereas high Q client firms do not experience significant value changes. This result suggests that the stock market is surprised at the contract announcements of low Q firm sub-sample, which is consistent with the free cash flow hypothesis. These findings are consistent with Hayes et al. (2000), who did not find statistically significant market reaction for the full sample as well.

Gao (2005) also used multivariate regression analysis to test whether the size of the outsourcer, contractor, deal or the year are associated with the market reaction. He found out that that the outsourcer's size is significantly negatively related to the excess returns, again consistent with the findings of Hayes et al. (2000). The other variables did not show any significant results.

Additionally, Gao (2005) studied the impact of outsourcing transactions on the contractor firm. He hypothesized that the outsourcing announcements have a positive impact on the market value of the contractor, since winning an outsourcing contract is a sign of contractor's competitiveness and can also indicate rise in future profits. Consequently, contractors of finalized deals experienced significantly positive excess returns. And these value gains were significantly positively related to the size of the deal and negatively related to the size of the contractor. According to Gao (2005), these findings provide evidence that signing an outsourcing contract generates value gains for the contractor.

Gellrich and Gewald (2005) analyze a sample of 162 outsourcing transactions between 1997 and 2004 in order to investigate the drivers of excess returns to shareholders of outsourcers and contractors in the global financial services industry. However, the sample size in the multivariate cross sectional regression analysis is only 60, due to difficulties in obtaining financial data of the companies. They focus on the financial services industry and extend their sample to the full scope of strategic outsourcing options also including application maintenance or business process outsourcing. Similar to Gao (2005) they study the impact of the outsourcing announcement on both the outsourcer and contractor. According to their study, shareholders earn, on average, slightly negative (but mainly no significant) returns in most of the analyzed event windows for both the outsourcers and contractors. These results differ from above mentioned related findings, which mainly report positive cumulated abnormal returns. However, the results are not fully comparable due to the industry focus and extension of outsourcing type.

Similar to Oh and Gallivan (2003), Gellrich and Gewald (2005) also examined the relationship of several outsourcing risk related factors and the market reaction. These factors are: deal size, deal length, deal complexity (multi-vendor relationships), experience of the service provider, transaction focus and financial reliability of the outsourcer. Their results support two of the initial hypothesis. First, for the deal length their analysis yields a

significant negative coefficient for the outsourcers. It appears that for outsourcers, investors do not approve long deals, in line with their expectations of higher risk with long contracts. Second, outsourcers engaging in partnerships with experienced service providers are significantly rewarded by capital markets. This result supports their hypothesis that experience, counted as number of past deals, can be viewed as an appropriate proxy for risk-reducing qualities and abilities. This implies that the stock markets react in a conservative way if it comes to large and risky projects such as outsourcing engagements. These results are both unique as these variables have not been tested in other studies and/or no significant relationship have been found.

There are also non-academic studies that relate outsourcing to shareholder values. For example, Glassman (2000) examined 27 companies which undertook large information technology outsourcing initiatives between 1993 and 1999. Focus of this study was on IT mega deals as deals were included if their contract value was worth at least 2% of the company's market value prior to the press release. He found an average excess return of 5.7 per cent over the general market trend from two months prior to two months after the announcement. Glassman concluded that outsourcing creates value to shareholders as outsourcing has become a management technique that can reduce risk and increase flexibility by making costs variable. Albright (2003) built on the study provided by Glassman. The research timeframe was extended to cover a data set of 45 mega deals from 1993 to 2002. Similar to the Glassman's study, Albright concluded that outsourcing has a positive effect on shareholder value. Additionally, he concluded that selective outsourcing is the superior strategy. The fact that the event windows were fairly long in these studies, impairs the reliability of the results as there can be several other transactions and events having impact on the market value besides the outsourcing announcement.

There has been only a few other event studies on outsourcing besides the ones described above and all of these studies had very limited sample size. The results of these studies are mostly consistent with the positive excess returns associated with the outsourcing announcements. McLellan (1994) analysed the stock market reaction of 30 outsourcing announcements during 1985 to 1990 by US companies and found a substantial positive excess return on the day of the outsourcing announcement but with no excess returns before or after the announcement day. The positive stock market reaction was confirmed by Loh (1992), in the examination of stock market reactions to information system announcements in a sample

of 55 US companies. He applied a 10-day window to examine the market reaction, reflecting the uncertainty on the time when the outsourcing news was actually received by the market. However, contrary to the above mentioned studies, Peak (1994) examined the effects of 14 US Fortune-500 announcements of information system outsourcing and found negative cumulative abnormal returns. In addition they found out that the implied volatility in stock option prices showed increased volatility subsequent to the announcement.

Following table 1 summarizes the key hypothesis and findings of the previous event studies on outsourcing announcements.

Table 1. Summary of prior outsourcing announcement event studies
This table summarizes previous event studies related to outsourcing announcements. The table lists the authors, focus and main findings of the study as well as the explanatory variables used in the study showing both hypothesis and actual results for each variable.

Author and Year	Focus of study	Major findings	Variable	Hypothesis	Results	Significance
Hayes, Hunton and Reck 2000	Market reaction of outsourcers on announcements of information systems outsourcing	Statistically significant positive reaction for small firms and service firms but not for the whole sample	Size of the outsourcer	-	-	Statistically significant
			Industry classification, service firms (1) vs. others (0)	+	+	Statistically not significant
Juma'h and Wood 2003	Market reaction of outsourcers on announcements of business service outsourcing	Statistically significant positive reaction for the whole sample (using initial announcements), large companies had stronger positive reaction	Size of the outsourcer		+	Statistically significant
			Deal size			
Oh and Gallivan 2003	Market reaction of outsourcers on announcements of IT outsourcing	Only weak evidence with respect to investors' positive reaction on outsourcing announcements	Asset specificity, specific (1) vs. non-specific (0)	-	-	Statistically significant
			Deal size	-	-	Statistically highly significant
			Deal length	-	+	Statistically not significant
			Cost focus, cost focus (1) vs.others (0)	+	-	Statistically not significant
Gao 2005	Market reaction of outsourcers and contractors on announcements of all types of outsourcing transactions	Outsourcer: Positive but statistically insignificant reaction for the whole sample, low Q firms had statistically significant positive reaction	Size of the outsourcer		-	Statistically significant
			Size of the contractor		+	Statistically not significant
			Deal size		+	Statistically not significant
			Year		+	Statistically not significant
		Contractors: Statistically significant positive reaction for the whole sample	Size of the outsourcer		-	Statistically not significant
			Size of the contractor		-	Statistically highly significant
			Deal size		+	Statistically highly significant
			Year		-	Statistically not significant
Gellrich and Gewall 2005	Market reaction of financial institutions (outsourcers) and contractors on announcements of IT or business process outsourcing	Outsourcer: Slightly negative but insignificant reaction for the whole sample	Deal size	-	+	Statistically weakly significant
			Deal length	-	-	Statistically weakly significant
			Deal complexity, multi-vendor (1) vs. single vendor (0)	-	+	Statistically significant
			Service provider experience (number of deals)	+	+	Statistically significant
			Non-core outsourcing, non-core (1) vs. core (0)	+	-	Statistically not significant
			Financial performance of contractor	+	+	Statistically not significant
		Contractor: Slightly negative but insignificant reaction for the whole sample	Deal size	-	-	Statistically weakly significant
			Deal length	-	+	Statistically not significant
			Deal complexity, multi-vendor (1) vs. single vendor (0)	-	+	Statistically not significant
			Service provider experience (number of deals)	+	-	Statistically weakly significant
			Non-core outsourcing, non-core (1) vs. core (0)	+	+	Statistically highly significant
			Financial performance of contractor	+	+	Statistically not significant

3. Hypothesis

The structure of the hypotheses part of this study follows the structure of the methodology. In summary, the methodology is the following. First, the event-study method is used to obtain an assessment of the outsourcer's and contractor's market reaction to an announcement to outsource all or portion of firm's IT or electronic manufacturing functions. Second, in order to gain further insight into the nature of the capital market response to the outsourcing announcement, a set of sub-samples based on various characteristics associated with the outsourcing event and the outsourcing or contracting firm are constructed. Finally, the effect of these characteristics on the market reaction is considered simultaneously by using multivariate cross-sectional regression analysis of the announcement period returns. Therefore, the first hypothesis to be developed and tested is that the cumulative abnormal return in a given window is significantly different from zero for the outsourcer, contractor and combined entity separately. After that, in the following paragraphs the different hypotheses on the effect of the firm and outsourcing event characteristics on the market reaction are developed and presented. The hypotheses are developed and presented separately for outsourcer and contractor (and combined entity).

3.1. Aggregate sample hypotheses

The first hypothesis to be developed and tested is that the cumulative abnormal return in a given window is significantly different from zero for the outsourcer, contractor and combined entity separately. There are several different factors already covered (at least partly) in the earlier part of this study that indicate that the outsourcing creates value. The most consistent of these factors are economies of scale and scope, importance of core competencies, flexibility, and cost reduction. These factors are documented in the literature as sources of value creation in outsourcing and most of them are typically explicitly stated as a reason for outsourcing in the announcements studied for this study. The above mentioned benefits of outsourcing are directly linked to the costs and revenues of the outsourcer and thus the effect on the market value is explicit. There is, however, also a signalling value embedded in the outsourcing announcement, which further increases the likelihood that the outsourcing announcement is taken as positive news by the markets. Since outsourcing announcement are one of the few direct signals a management can give to demonstrate to shareholders that they

are maximizing the firm value by disposing activities failing to cover their cost of capital, the announcements are expected to have strong signalling value. Although companies are expected to systematically structure their activities in view of comparisons of internal costs with an equivalent supply from an external vendor, agency and managerial objectives arise and thus shareholders cannot be certain that such an assessment has taken place until outsourcing event occurs. In addition to all the above mentioned factors and theories also the sunk cost bias, discussed in the literature part of the study, indicate that the outsourcing is a value creating event. Since most of the determinants of IT and manufacturing outsourcing have the potential to create value for the firm, the outsourcing decision should be salient to the market. Furthermore, because IT and manufacturing outsourcing agreements are not reflected in historical accounting information, the announcements of such outsourcing decisions should bring new information to the market.

There are, however, some factors and theories that challenge the value adding role of an outsourcing decision, such as the hubris theory, already discussed in the literature part. Firms may also use outsourcing simply to realize resources that allow them to maintain existing value reducing activities. Furthermore, since there are no mandatory rules covering the disclosure of outsourcing announcements the date of a voluntarily outsourcing announcement at best sets the last date at which information became public and it is possible that some information regarding the outsourcing event has already earlier been delivered to the market. For these reasons it is expected positive relationship (if any) of the outsourcing announcement and market value reaction is going to be rather weak for the outsourcer. Therefore two-tailed tests have been used. However, for the contractor the positive market reaction is anticipated to be stronger than for the outsourcer, due to the fact that many of the factors challenging the value-adding role for the outsourcer favour the contractor (e.g. hubris theory).

Based on the above discussion, following is hypothesized:

H1 (outsourcer): The mean cumulative abnormal return for the aggregate sample of outsourcing firms is significantly different from zero

H1 (contractor): The mean cumulative abnormal return for the aggregate sample of contractors is significantly different from zero

H1 (combined entity): The mean cumulative abnormal return for the aggregate sample of combined entities is significantly different from zero

3.2. Firm and event characteristics related hypotheses

In the following paragraphs the different hypotheses on the effect of the firm and outsourcing event characteristics on the market reaction are developed and presented. The hypotheses are presented separately for outsourcer and contractor. As already discussed, the investor reaction to IT or manufacturing outsourcing announcements might vary according to the context due to differences in firm and/or outsourcing event characteristics. In another words, cost, revenue and signaling effect implications of the outsourcing announcement may differ depending on the context, due to firm and/or outsourcing event characteristics. Cost, revenue and signaling effect are three separate mechanisms through which the outsourcing announcement will affect the market value of a firm. Depending on the characteristic in question, it may have an effect on the market reaction through one, two or all of these mechanisms, making it in some cases difficult to distinguish what the true underlying reason is. In order to consider various firm characteristics several firm characteristics have been chosen. The characteristics have been chosen for various reasons based on previous studies or theories developed in this study and presented later in this chapter. Also market-to-book ratio and firm risk (approximated by the variability of daily stock returns) have been chosen as Fama and French (1992) have found that stock markets returns are influenced by these factors. These variables are widely accepted in finance and accounting to represent key firm characteristics that mediate market reactions. In addition to the firm characteristic variables, we consider several outsourcing event characteristic variables based on the extant literature and theories developed in this study in order to more precisely determine their impacts on market reaction. The firm and outsourcing event characteristic variables are articulated and hypotheses developed in the following paragraphs.

Table 3 provides a summary of the hypothesis by listing them together with the corresponding variables that are used for testing.

Profitability of the outsourcer

One determinant of information technology or manufacturing outsourcing is the immediate reduction of costs to remain competitive. While reducing costs might positively impact a firm's value in the short-term, it may not enhance firm value in the long term, especially if the outsourcing strategy is solely aimed at reducing costs (Bettis et al 1992; Dess et al. 1995; Quinn et al. 1990). The rationale behind this conclusion is that the drive to cut costs may cause a firm to indiscriminately outsource information technology or manufacturing functions. In another words, the firm is less likely to separate nonvalue-added functions from value-added core competency functions that should remain in the firm. Consequently, if the market determines that the firm is outsourcing IT or manufacturing function as a way to immediately reduce costs and deems that this tactic will not have a positive impact on the cash flows on a long term basis, it is unlikely that the market value will be positively affected. Additionally, it is hypothesized that firms profitability will correlate with the probability that a company is outsourcing IT or manufacturing solely to immediately reduce costs. That is to say, companies with low or negative profitability are more likely to outsource functions in order to immediately reduce costs than companies with high profitability. Therefore, the profitability level of a company should have a significant effect on how the market reacts to an outsourcing announcement by the company. Based on the above discussion following is predicted:

H2: The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions will have better impact on the market values of firms that have high profitability than on firms with low or negative profitability.

Outsourcing deals are often sweetened with financial incentives, such as stock purchases, loans at low interest rates, and postponed payments (Lacity and Hirschheim 1993). At the outset these deals may thus be extremely attractive, especially to an organization that suffers financially. This can increase the likelihood of financially weak companies deciding on deals based on its short-term implications with less emphasis in long-term value enhancement. This would be an additional supporting argument for the hypothesis developed above.

A possible counter-hypothesis for H2 is based on an idea that companies with low or negative profitability are more likely to have IT and manufacturing functions that are not optimally

managed and thus not cost competitive. This would therefore indicate that the lower the profitability of the firm is the more potential there is to reduce the cost by outsourcing the high cost functions. On the other hand it could also be argued that a company that is already very efficient is more likely capable to harvest the maximum benefits from an outsourcing decision, while an inefficient company has more potential for the contractor.

Size of the outsourcer/contractor

According to capital market theory, an efficient market attaches value to a firm based on publicly available information. Therefore, when information is not available, the valuation of the firm becomes more difficult and costly process. Furthermore, prior research indicates that the amount of publicly available information is not equal for firms of all sizes. Consequently, uneven costs and information asymmetry are imposed between large and small firms. Past research indicates that financial accounting information is more value-relevant for small firms than it is for large firms due to the information asymmetry (Atiase 1985 and Grant 1980). As a result of closer following by media and analysts, there is more public information about large companies than small companies between releases of financial accounting reports. Similarly to financial accounting information, it is expected that also nonfinancial forward looking information having the potential to impact future cash flows will be more available for large firms than small firms. As a result, announcements made by small firms that might impact future cash flows are expected to yield greater market reaction since such announcements have more value for investors valuing the small firm stocks. Furthermore, before making IT or manufacturing outsourcing announcements available to public, it is likely that managers of large firms have already informed analysts that they are investigating the outsourcing option (Hayes et al. 2000). Based on this information asymmetry argument, related to firm size, following is predicted:

H3 (outsourcer): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions will have greater impact on the market values of smaller firms than on the market values of larger firms

H3 (contractor): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions will have greater impact on the market values of smaller contractors than on the market values of larger contractors

A secondary factor, which would also support hypothesis 3, is related to the relative size of the outsourcing announcement. Given that there are both a small and a large firm committing to outsource a similar function of similar size, the market may perceive that the relative magnitude of the direct benefits available to the small firm is greater than in the case of the large firm due to the fact that the long-run percentage of costs saved or revenue increased will be greater for the small firm.

Similarly, supporting argument for the hypothesis 3, is the fact that smaller firms should have more to gain from outsourcing as the economies of scale that the contractor can provide should benefit the small firm more than a large firm.

A counter-hypothesis for H3 could be that larger firms may have more power in negotiating with the contractors and therefore obtain a better contract than smaller companies. This would lead to inverse relationship compared to what is hypothesized above.

Size of the contractor

Larger contractors are able to negotiate a larger share of potential savings than small contractors due to more power in negotiating with outsourcer and may therefore obtain a better contract than smaller companies. Following this rationale of relative negotiation power, it is expected that:

H4 (outsourcer): The market's reaction to IT or manufacturing outsourcing announcements will be inversely related to the size of the contractor

Industry classification

Prior research indicates that service firms and especially financial service firms allocate a higher portion of their resources to information technology than do non-service firms (Gordon et al. 1993; Roach 1988). Study by Quinn and Baily (1994) found that the compound annual growth rate for IT investments by the service industry was 14 percent during the decade of the 1980 and for financial service firms that figure was even significantly higher, averaging 29.5 percent annually. Furthermore, Bureau of Economic Analysis data show that approximately

60 percent of all computer equipment investments are made by the service sector (Hayes et al. 2000). Approximately 42 percent of capital investments in the financial service industry were for information technology assets in 1998 (Reynolds 1999). Finally, as already discussed in the theoretical part, McLellan et al. (1995) showed IT is a very important skill in the financial sector, and therefore also an important expenditure, as it presents more than 8% of the non-interest costs of the studied companies. Additionally, Roy and Aubert (2002) argue that especially IT applications developed in financial service firms are more likely to have strategic value, which is closely related to the view of McLellan et al (1995). Therefore, it could be argued that IT represents a core activity in the financial service firms rather than being a support function (at least to a larger extent than in other companies). In essence, this industry variable serves then as a proxy for a firm's degree of information intensity. Consequently, it is expected that IT outsourcing will have a greater effect on the cost structure and revenues of a financial service firm compared to other firms due to the higher degree of information intensity in financial service firms. Based on the above discussion following is anticipated:

H5 (outsourcer): The announcement to contract all or portion of a firm's IT functions will have a greater impact on the market values of financial service firms than on the market values of other firms

A secondary factor, which would also support hypothesis 5, is related to the information asymmetry. Flannery (1986) indicates that relatively greater information asymmetry exists among investors for financial institutions and other industries with poor external documentation. Therefore, the announcement of forward-looking strategic information for firms in the financial services industry has the potential to decrease information asymmetry and allow for proper market valuation.

Outsourcing type

Since outsourcing is one of a few direct signals a management can give to demonstrate to shareholders that activities that are not able to cover their cost of capital will be disposed, the signalling effect of such an announcement is expected to be significant. Furthermore, this signalling effect is predicted to be the stronger the closer to the core the outsourced activities are since then the signal related to the lack of agency costs is higher as is likely to be the

impact of the outsourcing on the bottom line. In this study it is assumed that following Porter's (1985) value chain concept, the manufacturing function is a core activity, whereas in many industries information technology is regarded a support function. Therefore, manufacturing outsourcing announcements should carry a stronger signalling value compared to IT outsourcing announcements. Thus, following is predicted:

H6 (outsourcer): The announcement to contract all or portion of a firm's manufacturing functions will have a better impact on the market value compared to the announcement to contract all or portion of a firm's IT functions

Deal size

The monetary size of the contract is expected to play a role in determining the level of dependency between the outsourcing firm and contractor. Intuitively, as the size of the contract increases, the client tends to lose control over its internal resources and becomes more dependent on the contractor. Barki et al. (1993) show that the size of IT projects determines one dimension of the risk profile, identifying a positive relationship between project size and the level of risk, due to task uncertainty. Furthermore, the size of the contract is also positively correlated with the level of switching costs required to substitute another vendor. In addition, the cost associated with monitoring the supplier increases as the contract size increases. Consequently, due to increased dependency and the substantial monitoring cost, investors are anticipated to react negatively to larger IT or manufacturing outsourcing announcements. Therefore, the following is expected:

H7 (outsourcer): The market's reaction to IT or manufacturing outsourcing announcements will be inversely related to the size of the contract

A secondary hypothesis either supporting or contradicting H7 could be that large deals have more impact on the bottom line of the companies involved and therefore should result in greater impact on the market value of the outsourcing firm. Whether the impact on market reaction in total is positive or negative will define if this counter hypothesis leads to positive or negative correlation between deal size and market reaction.

However, for the contractor opposite reaction is expected due to the increased dependency and the substantial monitoring cost. Therefore, the following is expected:

H7 (contractor): The market's reaction to IT or manufacturing outsourcing announcements will be positively related to the size of the contract

Deal length

The duration of the contract is an important factor in many IT or manufacturing announcements. Especially, when the business environment in which the firm operates is uncertain and difficult to predict, contracts of longer duration become less attractive for the outsourcer. In addition to the business environment uncertainty also technological uncertainty plays a role in IT and manufacturing announcements by creating a potential for technological discontinuities. Taking into account the business environment, technological risk and the speed of change signing a long-term contract with an IT or manufacturing service vendor may be risky. Hence, a long-term commitment to particular contractor is likely to be less cost-effective, and may reduce the client's ability to leverage cost-saving technologies in the future. In addition to the cost factors, long-term contracts tend to limit a firm's strategic flexibility. Being legally obligated to one vendor for a long period of time may prevent the client from assessing the newest technologies and from combining best-of-breed innovations available in the marketplace. Therefore it is predicted that a longer deal is less attractive for the outsourcer but more attractive to the outsource contractor (vendor). Based on the discussion following is expected:

H8 (outsourcer): The market's reaction to IT or manufacturing outsourcing announcements will be inversely related to the proposed duration of the contract

H8 (contractor): The market's reaction to IT or manufacturing outsourcing announcements will be positively related to the proposed duration of the contract

Performance

A company that is evaluated as a success by the capital markets is in a stronger position to negotiate a good deal than a company that is regarded as a failure. Strong performance of a

firm is expected to have a positive impact on the market reaction as it increases firm's negotiation power. On the other hand, a firm that has a poor performance in terms of its market value has weaker position when negotiating a deal as it may act under pressure. Based on the relative negotiation power between outsourcer and contractor the following is predicted:

H9 (outsourcer): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions will have better impact on the market value of a firm that has performed strongly in the capital markets compared to a firm with poor performance

H9 (contractor): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions will have better impact on the market value of a contractor that has performed strongly in the capital markets compared to a contractor with poor performance

Level of agency costs

Since outsourcing announcement are one of the few direct signals a management can give to demonstrate to shareholders that they are maximizing the firm value by disposing activities failing to cover their cost of capital, they are expected to have strong signalling value. Although companies are expected to systematically structure their activities in view of comparisons of internal costs with an equivalent supply from an external vendor, agency and managerial objectives arise and thus shareholders cannot be certain that such an assessment has taken place until outsourcing event occurs.

There are various explanations why firms may engage value-destroying activities. Jensen (1986) implies that managers have incentives to grow their firms beyond the optimal size since growth increases manager's power by increasing the resources under their control. In a similar fashion, Stulz (1990) argue that managers might benefit from a diversification policy because of the power and prestige associated with managing larger firm. Furthermore, Jensen and Murphy (1990) argue that managerial compensation is related to firm size, which thus encourages corporate strategies that generate asset growth. According, to Jensen (1986) the conflicts of interest between shareholders and managers over the payout policies are especially severe when firm generates substantial free cash flow, whereas large amounts of debt reduces the agency costs of the free cash flow.

In another words, outsourcing announcement resolves agency issues. Therefore, it is expected that companies that are more likely to suffer from the agency costs (substantial free cash flow and/or low debt) should benefit more from sending signal to the market. Hence it is hypothesized:

H10 (outsourcer): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions will have a better impact on the market values of firms that have high agency costs compared to firms with low agency costs

Reason for outsourcing

Several objectives have been identified for why firms outsource their IT or manufacturing resources, including cost saving, improved quality, access to new technologies and the ability to focus on the core competencies. These objectives can be broadly divided into cost saving and additional revenue related objectives. Cost reduction is an internal matter and measuring the impact of IT or manufacturing outsourcing decision on cost reduction has traditionally been easier than quantifying the impact on revenue-growth, which is to large extent determined by numerous external factors. Therefore, the impact of IT or manufacturing outsourcing on revenue generation is expected to be extremely difficult to detect and assess. Furthermore, enhancing revenues through outsourcing may require a longer horizon and is thus more difficult to measure. When the relatively lower measurability of revenue side objectives is combined to the service providers temptation to behave opportunistically by shirking (or otherwise not doing optimal work for the outsourcer) the following is predict:

H11 (outsourcer): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions driven by long-term cost reduction objective will have better impact on the market value of the firm than announcement driven by revenue side objectives

H11 (contractor): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions driven by long-term cost reduction objective will have worse impact on the market value of the contractor than announcement driven by revenue side objectives

This hypothesis is not contradictory to hypothesis 2 (profitability) since H11 highlights the negative impact of short-term cost reduction objectives that override the long-term value maximization of the firm, whereas this hypothesis concentrates on long-term cost reduction objective that does not have to be inconsistent with the long-term value maximization strategy.

The different objectives for outsourcing can be classified in another manner according to their strategic role for the firm. Following Schein's (1989) and Dehning's et al. (2003) conceptualisation IT investments can either automate business processes or they can have a more transformational role, where IT is used to transform the firm by fundamentally redefining business and industry processes and relationship in order to position themselves in an advantageous way to their competition. When IT investments are transformational, the changes are predicted to be disruptive rather than incremental, and therefore promises high, sustainable returns if the investments are successful (Dehning et al, 2003). Following this logic, it is expected that firms announcing transformational IT or manufacturing outsourcing deals are more likely to experience greater abnormal returns than firms making non-transformational investment announcements. Following is therefore anticipated:

H12 (outsourcer): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions driven by transformational objective will have greater/better impact on the market value of the firm than announcement driven non-transformational objectives

Type of the announcement

The market reaction to IT or manufacturing announcements should reflect the degree to which they provide new information to investors regarding the expected cash flows and risk of the outsourcer (or contractor). However, if the market considers the announcement to be only a routine decision that is part of already expected and discounted strategy the market reaction should not be as significant. Similarly, if the market has already earlier been informed about the potential outsourcing deal and the new announcement in question only contains some details as new information the impact is predicted to be less significant than in the case of initial announcement. Therefore, when companies first announce that they are in the process of negotiating an outsourcing deal with an outside vendor the market reaction should be higher since most of the new information is then given, whereas when companies later

announce that they have signed a definitive contract and they disclose some additional details (e.g. the actual deal size and length of the contract) of the deal only part of that information is new to the market and thus the reaction is expected to be smaller. In addition to disclosing the details of the deal, a multiple announcement informing on definitive agreement increases the probability that the outsourcing deal will actually take place in the future and therefore has some additional value to the investors. Hence, following is predicted:

H13 (outsourcer): The initial announcement to contract all or portion of a firm's IT or manufacturing functions will have a greater impact on the market value of the firm compared to the multiple announcements

H13 (contractor): The initial announcement to contract all or portion of a firm's IT or manufacturing functions will have a greater impact on the market value of the firm compared to the multiple announcements

Firm risk

Variability of daily stock returns is often used to measure risk as perceived by market investors, indicating the extent of uncertainty about future firm cash flows. This uncertainty is comprised of two elements, which are systematic risk and unsystematic risk. According to a view by Hartman (1972), Abel (1983) and several other economic researchers the marginal value of capital investments is convex in the stochastic variable and thus the uncertainty can have a positive effect on a firm's profitability. Therefore according to this view, announcements of capital investments, such as IT or manufacturing investments, may produce a positive market reaction when a firm is facing greater uncertainty.

In addition to the above view, there is another view that is specific to IT investments and does not relate to manufacturing decisions. According to this view, (Galbraith 1977; Gurbaxani and Whang 1991) IT investments play a significant role in reducing uncertainty by helping firms react more actively and responsively to both external and internal risks. This viewpoint thus asserts that IT related capital investment announcements are likely to decrease the level of uncertainty for a given firm and increase the firm's potential to stabilize. Furthermore, much of a firm's uncertainty is caused by technological uncertainty, which can be reduced by investments in technology (McGrath 1997). Although, the above viewpoints are related to

capital investments and it is questionable if they apply as such to outsourcing situations, in this study in is anticipated that markets will react positively to announcements of both IT and manufacturing investments, mainly due to their potential to reduce the level of uncertainty. In many cases the outsource contractor is a global firm specialising in either IT or manufacturing and therefore in better position to invest in the relevant technologies than the outsourcing firm. Based on the above discussion following is predicted:

H14 (outsourcer): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions will have a better impact on the market value of firm's with high uncertainty

A possible counter-hypothesis for H14 is based on an idea that decision to outsource IT or manufacturing functions is a source of uncertainty rather than a solution to it. According to this perspective, the majority of IT or manufacturing outsourcing decisions embody inherent risks of failure and are therefore likely to increase uncertainty. The results obtained by Peak et al. (1994) support this since they found out that the implied volatility in stock option prices showed increased volatility subsequent to the announcement. However, their sample size was very limited and thus the results are not especially reliable. Furthermore, one perspective suggests that because of the uncertainty surrounding risk aversion, incomplete markets (Nickell 1977; Craine 1989), and irreversibility of investments (Pindyck 1988), investment spending is depressed in firms. The high uncertainty associated with the outsourcing decisions may thus aggravate the situation. Consequently, rational investors will likely react negatively to IT or manufacturing announcements made by firms with high uncertainty.

Growth opportunities

There are several studies in finance and accounting demonstrating the role of a firm's growth prospect in the market reaction to corporate announcements. Using proxies based on various accounting measures, such as market-to-book (MB) ratio and Tobin's Q, this variable represents a firm's potential for growth prospects; a high ratio means that investors believe the firm has high growth potential, and vice versa. A firm's growth opportunity is a key determinant of market reaction since it is also a key determinant of firm's market value - firm's market value is determined by a combination of both assets in place and future growth options (Fama and French 1992; Dewan, Michael and Min 1998; Chatterjee et al 2002).

Traditionally, the relationship between a firm's growth options and the market reaction has been studied in various contexts, including new capital investment (Chan, Gau and Wang 1995; Chatterjee et al. 2002), new equity financing (Pilotte 1992), dividends (Lang and Litzenberger 1989), and asset sales (Lang, Poulsen and Stulz 1995).

Most of these studies reveal a positive relationship between a firm's growth opportunities and market reactions. According to these results, the market generally perceives that high-growth firms have better management capability than do low-growth firms to turn capital investments into positive net present values. However, the fact that outsourcing is not directly comparable to capital investment complicates the formulation of the hypothesis related to the firm's growth opportunities. Based on this reasoning the following is anticipated:

H15 (outsourcer): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions will have a better impact on the market values of firms with high growth opportunities compared to firms with low growth opportunities

Outsourcing structure – alliances

There are several ways to organize the complex relationship between the outsourcer and the contractor. According to Roy and Aubert (2002) IT applications having strategic value should be governed through partnership (i.e. outsourced in close co-operation with the outside supplier), in the case of low or medium presence of these resources. Furthermore, McLellan et al. (1995) theorized that alliance governance structure, that is the base of many of the most comprehensive IT outsourcing relationships, facilitates the outsourcing of IT even when it is considered core skill. Therefore, it is expected that the outsourcing deals, where the outsourcer and contractor form an alliance are more likely to be strategically important and will have higher probability of success. Consequently, the following is hypothesized:

H16 (outsourcer): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions in an alliance will have a better impact on the market value of firm compared to announcements with normal outsourcing structure

H16 (contractor): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions in an alliance will have a better impact on the market value of the contractor compared to announcements with normal outsourcing structure

Experience of contractor

Transactions are expected to be more successful if the contractor has a track record. In addition to the historical information on successful deals, which may lower the perceived risk, a contractor with substantial track record is likely to have larger economies of scale. Therefore, following is predicted:

H17 (outsourcer): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions will have a better impact on the market value of firm when the contractor has a track record

H17 (contractor): The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions will have a better impact on the market value of the contractor when the contractor has a track record

4. Description of the methodology and data

The basic sample of outsourcing announcements consists of 316 initial and multiple information system (IS) and electronic manufacturing services (EMS) announcements during the January 1999 – December 2004. However, various smaller sub-samples are used in the study due to lack of comprehensive data on all the events. The outsourcing announcements come from all the major markets, so no geographical restrictions have been applied when gathering the announcement data.

4.1. Definition of Outsourcing

When deciding what constitutes an outsourcing announcement the definition by Juma'h and Wood (2003) is applied. According to Juma'h and Woods (2003) outsourcing occurs when activities such as information technology management, finance and accounting services or manufacturing are switched from internal provision to provision by external contractor. They also add that to the definition that usually outsourcing involves a long-term service contract that is less permanent than total disposal of an activity. There are, however, a few occasions when the definition of outsourcing requires further explanation. In some cases the ownership of the outsourcing company's assets and employees is not transferred fully to the outsourcing contractor and instead the outsourcer retains a stake in the newly created entity owned together by the outsourcer and the contractor. In this study these are included as outsourcing announcements provided that the outsourcer's share in the new entity is less than 50% and that the new entity's main purpose is to serve the outsourcer's internal needs instead of selling its services to third parties. There are, however, only 12 events that belong to the above-mentioned category of announcements.

4.2. Observation of the event and stock exchange data

The sample is obtained from the various Internet based databases by using key word search. Most of these databases were either IS or manufacturing specific news services or outsourcing contractors (vendors) web pages. The sample is presented in appendix 1. Due to the nature of

the data source the search was done for period January 1997 to December 2004. The keywords were carefully selected based on a combination of terms describing IT or electronic manufacturing services and a set of action verbs (e.g., award, outsource, purchase, sign, contract, etc.). Because many outsourcing arrangements occur in the form of partnerships or more complicated multivendor arrangements also other phrases such as partnership and alliance were used to identify these current practices. Several thousands of news articles and press releases were initially filtered from which 412 proved to be relevant for this study. After the initial filtering, another filtering process was conducted in order to eliminate events that have any other compounding news released around the announcement day. It is important to note that extraneous events, such as profit announcements, joint ventures, and mergers or acquisitions, any of which might confound the market reaction around the event date, were eliminated during this "filtering" process (McWilliams and Siegel 1998). Altogether, 41 events were eliminated due to compounding news released. Finally, 55 more events were eliminated due to difficulties in getting the share price information or financial information (firm characteristics). The final sample for outsourcers contains thus 316 events from the period January 1997 to December 2004, being larger than most of the previous studies and thus making it possible to test several hypotheses simultaneously (see Appendix 1). The final sample for outsourcers, however, contains several events for which deal details such as deal size and deal length (84 events) were not announced or for which some firm characteristic was not found (9 additional events). The corresponding figures for the sample size of the contractor are smaller since some of the announcements did not disclose the contractor: 305 (final sample size), from which 68 events do not have data on the deal size and length and further 15 do not have data on some other firm characteristic.

Due to the key word search technique the sample will be biased towards bigger outsourcing announcements, that is to say, to ones that will make news. This is not assumed to be a significant problem since already the nature of the event study requires that the outsourcing announcement are large and important enough so that there will be statistically observable stock market reaction. Furthermore, most of the databases can be used to search for the IT outsourcing announcements only. However, since the number of possible vendors (due to economies of scale) for both major IT and manufacturing outsourcing contracts is limited, the web pages of the major outsourcing vendors can be used as primary data source. This is especially true in the case of the manufacturing outsourcing announcement.

The stock market and financial information is obtained from the 'Thomson Financial' database, containing access to several other databases, from which 'Datastream International' was the most often used.

4.3. The event: Outsourcing event window

Choosing appropriate event window is one of the most difficult and important factors in this study. There is trade-off when choosing proper event window since too short window may mean that some part of the announcement effect is omitted whereas too long window results in diluting the announcement effect by distributing it to too many days and also by increasing the chance of some other material events occurring, which will be mixed with the outsourcing announcement effect. Furthermore, some outsourcing deals have multiple possible dates, which could be interpreted as the date of the announcement. As will be explained in following parts of the Thesis, the announcement may consist of several announcements: announcement that the outsourcing company is negotiating an outsourcing deal with external vendor, the announcement that the outsourcing company and vendor have signed a contract, the announcement when the actual contract be in effect or in the case of joint venture the new entity will began operations. The bigger the outsourcing deal the longer usually is the time between these different announcements and this will probably result in the weakening of the announcement effect on the announcement day as the information will be diffused into markets gradually. In the case of smaller or medium sized deals this is usually not as big of a problem. One additional source of complexity is the fact that in the case of big deals there might be rumours concerning the possible negotiations between outsourcing company and the vendor, which may furthermore dilute the announcement day effect and thus make it more difficult to obtain significant market reaction on the announcement day (or in the announcement event window). In order to reflect the different information release possibilities associated with each event several event windows are inspected before and after the outsourcing announcement date (t=0). As already mentioned short event window limits the possibility of extraneous noise affecting the results and is appropriate when researchers believe they have identified the date when information has been released (Fama 1991). Furthermore, narrow windows help to ensure that the price change around the announcement is due to information in the announcement. Prior studies that have used a two-day window have focused on either the day before announcement and the day of the announcement, or the day of the announcement and the day after the announcement. Hayes et al. (2000) argues that

since they used primarily wire services in their sample they expect that the market either impounded the information on the day it was released or on the subsequent day, since announcements often appear in wire stories a day prior to newspaper publication. Also three-day windows have been used (Berger and Ofek 1995). However, Juma'h and Wood (2003) used several windows ([-20,0] ; [-5,0] ; [0,+5] ; [0,20]), which were significantly longer than the above mentioned event windows, when they examined the market reaction to business service outsourcing in UK, due to various disclosure patterns that seem possible. They also used windows that extended to several days after the announcement. Due to the uncertainty about the precise timing of outsourcing announcement effect (e.g. due to rumours) and variety of disclosure patterns range of event windows is used based on the earlier studies and on the observed disclosure patterns. Furthermore, in the regression analysis a dummy variable is used as an explanatory variable to distinguish between the initial announcements and multiple announcements. All the used windows are presented in Table 2 below.

Table 2. Summary of event windows
This table presents the event windows used in this study. Start day column indicates the starting day of the event window to calculate excess returns, whereas end day column indicates the ending day of the event window.

	Start day	End day
Announcement day		
[0]	0	0
Around the announcement		
[-20,20]	-20	20
[-5,5]	-5	5
[-2,2]	-2	2
[-1,1]	-1	1
Up to the announcement		
[-1,0]	-1	0
[-2,0]	-2	0
[-5,0]	-5	0
[-20,0]	-20	0
After the announcement		
[0,1]	0	1
[0,2]	0	2
[0,5]	0	5
[0,20]	0	20
[1]	1	1

4.4. Methodology, testing significance of abnormal returns

In this study well-founded event study methodology has been applied, which relies on the market model based approach suggested by Fama et al. (1969) and perpetuated by Brown and Warner (1985). The structure of the statistical testing is the following. First, the event-study method is employed to obtain an initial assessment of the outsourcer's and contractor's stock market reaction to an announcement to outsource all or portion of firm's IT or electronic manufacturing functions. Second, in order to gain further insight into the nature of the capital market response to the outsourcing announcement, a set of subsamples based on various characteristics associated with the outsourcing event and the outsourcing or contracting firm are constructed and tested. Finally, due to the limitations in univariate analysis caused by the high number of different factors having an effect on the market reaction, the effect of these factors is considered simultaneously by using multivariate cross-sectional regression analysis of the announcement period returns. In addition, in each of these steps several different event windows, standardization of excess returns and two alternative risk adjustment proxies have been employed in order to enhance the reliability of the results. In the following the methodology of these three different analysis is further discussed.

4.4.1. Aggregate sample methodology

Following Brown and Warner (1980) (1985), the following definitions with respect to sample companies returns (R_j) and market returns (R_m) are used.

$$R_{j,t} = \ln\left[(P_{j,t} + D_{j,t}) / P_{j,t-1}\right] \quad (1)$$

$$R_{m,t} = \left[P_{m,t} / P_{m,t-1}\right] \quad (2)$$

where,

$P_{j,t}$ and $P_{j,t-1}$ are the price of the security (j) at time (t) and (t-1);
$P_{m,t}$ and $P_{m,t-1}$ are the price of the market portfolio at (t) and (t-1);
$D_{j,t}$ are dividends received on security (j) during period (t); and

$R_{j,t}$ and $R_{m,t}$ are the logarithmic returns on security (j) and the market index.

The null hypothesis (H_0) to be tested is that the mean excess returns (MERt) in a given window is equal to zero against the alternative hypothesis (H_1) that they are significantly different from zero. The excess return of a stock j in the event window is the difference between the observed return for that period and the expected return for that period. Excess returns (ER) were calculated using two alternative proxies to get more robust results.

Market adjusted excess return (MAR): $MA(ER_{j,t}) = R_{j,t} - R_{m,t}$ (3)

Market risk-adjusted excess return (MRAR): $MRA(ER_{j,t}) = R_{j,t} - (\alpha_j + \beta_j R_{m,t})$ (4)

An ordinary least squares (OLS) regression model is applied to estimate the risk-adjusted model parameters for each individual stock j. The parameters are estimated during a period of 170 trading days starting 200 trading days prior to the announcement day. In another words, a buffer of 30 trading days was left between the announcement day and the period from which the parameters are estimated. For market return a country market index (calculated by Datastream International) corresponding to the main stock exchange of the firm's shares is employed in order to take into account the variations of the different geographical areas.

Test statistic at the event day for outsourcer and contractor

Following Brown and Warner (1985) the announcement day is labeled as (t_0). The test statistic at the event day (t_0) following Brown and Warner (1985) is the ratio of the mean excess returns for j announcements (MER_t) relative to its estimated standard deviation [$S(MER_t)$].

$$test - statistic\,(at - specifi - day - t) = \frac{MER_t}{S(MER_t)} \quad (5)$$

where

$$MER_t = \frac{\sum_{j=1}^{J} ER_{j,t}}{J} \tag{6}$$

$$S(MER_t) = \sqrt{\left(\sum_{t=-200}^{t=-30} [MER_t - A(MER)]^2 \right) / 170} \tag{7}$$

$$A(MER) = \frac{\sum_{t=-200}^{t=-30} MER_t}{171} \tag{8}$$

Test statistic over multi-day intervals for outsourcer and contractor

In order to test the excess return interval of T-days, the test statistic is the ratio of the cumulative mean excess return (MCER) to its estimated standard deviation.

$$test - statistic(T - days) = \frac{\sum^{T} MER_t}{\sqrt{\sum^{T} S^2(MER_t)}} = \frac{\sum^{T} MER_t}{\sqrt{T} S(MER_t)} \tag{9}$$

The above test statistic is conditional on excess returns being jointly normally distributed, with a zero conditional mean, which is likely to be satisfied with an adequate estimation period. The longest event window consists of 41 days following the methods of Juma'h and Woods (2003). This window is [-20,20], where t=0 denotes the announcement day. Within this event window several periods are studied reflecting the different information release possibilities associated with each event.

Test statistics for the combined entity

Weighted average of outsourcer CER and contractor CER has been used as an empirical measure of the total percentage gains created by the jth outsourcer and the jth contractor. This is based on the methodology proposed by Bradley et al. (1988). The combined entity CER is thus a market value-weighted average of the outsourcer and contractor CERs. Otherwise the

methodology follows the methodology presented in the aggregate sample analysis part of this study. The formulae for the cumulative excess return is shown below:

$$CER_j \text{ for the combined entity} = \frac{W_{Oj}CER_{Oj} + W_{Cj}CER_{Cj}}{W_{Oj} + W_{Cj}} \quad (10)$$

where,

W_{Oj} and W_{Cj} are the market values of the jth outsourcer and jth contractor
CER_{Oj} and CER_{Cj} are the cumulative excess returns of the jth outsourcer and jth contractor

Test statistics for dollar returns

All the test statistics presented above are for percentage returns. However, dollar returns have also been calculated and tested in order to account for a size effect. The test statistics for dollar return are derived in a similar way than the percentage return test statistics with the exception that that the excess returns for firms have been multiplied by the market values of the firms at the time of the announcement or by the sum of market values of jth outsourcer and jth contractor in the case of combined entity dollar returns.

4.4.2. Analysis of a firm and outsourcing event characteristics

To gain further insight into the nature of the capital market response to the announcement to outsource, a set of subsamples based on various characteristics associated with the outsourcing event and the outsourcing or contracting firm are constructed. The methodology for testing these different subsampes follows the above methodology of aggregate sample analysis.

4.4.3. Cross sectional regression analysis

Due to a number of different factors (hypotheses) that should be simultaneously considered in determining the impact of outsourcing on shareholder wealth a multivariate cross-sectional regression analysis has been applied to the announcement period returns. This means that in order to test the different hypothesis presented earlier, the cumulative excess returns for each firm are regressed on the variable of interest.

The estimates on the gains created by outsourcing announcements i.e. the excess returns for the firms have been calculated using the methodology presented earlier (equations 3 and 4). These excess returns are then cumulated for the event window in question to obtain the cumulative excess return for the firm (CER_j). The formulas are presented below for market adjusted and market risk adjusted cumulative excess returns.

Market adjusted cumulative excess return (MCER): $MCER_j = \sum^{T} (R_{j,t} - R_{m,t})$ (11)

Market risk-adjusted cumulative excess return (MRCER):

$$MRCER_j = \sum^{T} (R_{j,t} - (\alpha_j + \beta_j R_{m,t})) \quad (12)$$

Several different multivariate cross-sectional regression models have been used in this study to examine the cross-sectional differences in the excess returns for outsourcer and contractor. Several models have been used mainly due to the difficulties caused by the high number of explanatory variables. First, the high number of explanatory variables reduces the statistical significance of the tests and therefore the variables applied are changed between the models by eliminating variables that do not appear to have any explanatory power. Secondly, different models have been tried in order to minimize the effects of multi-collinearity between some of the explanatory variables that have high correlation. Following is an illustration of the typical model (for market risk-adjusted cumulative excess return) and it does not contain all the explanatory variables.

$$MRCER_j = \gamma_0 + \gamma_1 VAR_j + \gamma_2 VAR_j + \gamma_3 VAR_j + \gamma_4 VAR_j + \gamma_5 VAR_j + \gamma_6 VAR_j + \gamma_7 VAR_j \quad (13)$$

Finally, also an additional model is used where all observations are standardized i.e. the cumulative excess returns are divided by the standard deviation of the firms' returns following Eades et al. (1984) to account for the possibility of heteroskedasticity in the data. This way the events with higher standard deviation are given less weight in the regression.

4.5. Regression variables

In the previous part of this study it was argued that the stock market reaction on outsourcing announcement varies contingent on the different firm and outsourcing event characteristics. Related to this, different hypotheses on the relationship between the stock market reaction and the firm and event characteristics were developed and presented. These hypotheses are tested employing a multivariate cross-sectional regression analysis, where the cumulative excess returns for each firm is regressed on the variable of interest. In the following paragraphs the variables that represent the different firm and outsourcing event characteristics are discussed. The issue of multicollinearity has been addressed by choosing variables so that the correlations between them are minimized. Table 3 provides a summary of the variables by listing them together with the corresponding hypothesis and classifies them into firm characteristic or event characteristic variables.

All the data for firm characteristic variables were obtained from the Thomson Financial and the data for outsourcing event characteristic variables from the press releases and news articles that were used to in the data gathering.

Profitability of the outsourcer

Net income-% and earnings before interest and taxes-% have been used as the alternative variables describing the profitability of the firm. Percentages have been used in order to avoid the potential multicollinearity with the revenue of the firm. Since better results were constantly obtained using net income, this is used as the main variable in the regressions reported later. This variable is called NET INCOME.

Size of the outsourcer

Consistent with previous studies (Hayes et al. 2000; Juma'h and Wood 2003; Gao 2005) both natural logarithm of revenue and market capitalization have been used as variables describing the size of the outsourcing firm. The results do not differ significantly depending on the metric used and revenue has been chosen as the primary proxy for the firm size consistent with previous study by Hayes et al. (2000). This variable is called OUTSOURCER REVENUE.

Size of the contractor

Both natural logarithm of revenue and market capitalization have been used as proxies for the size of the outsourcing firm. The results do not differ significantly depending on the metric used and revenue has been chosen as the primary proxy for the firm size, being consistent with the choice of proxy for the size of the outsourcing firm. This variable is called CONTRACTOR REVENUE.

Industry classification

A dummy variable has been defined to account for the industry classification. This variable is called FINANCIAL INSTITUTION and it assumes a value of one for financial institutions and a value of zero otherwise. Industry classification is based on the industry codes of Datastream and on author's own judgement. This definition differs somewhat from the definition used by Hayes et al. (2000), where the industry dummy assumed a value of one if the company was a service firm.

Outsourcing type

A dummy variable has been defined to describe the type of outsourcing in question. This variable is called MANUFACTURING and value of one is assigned to EMS outsourcing events and a value of zero to IT outsourcing events.

Deal size

Natural logarithm of the value of the deal in dollars divided by the length of the deal in years has been used as a proxy for the size of the deal. Natural logarithm of the value of the deal per year has been chosen for multicollinearity reasons, since the natural logarithm of absolute deal value is naturally highly correlated with the length of the deal, which is also one of the explanatory variables. This differs from the variable used by Oh and Gallivan (2004) and Gao (2005), since they employed the absolute deal size in dollars. An alternative proxy for the deal size has also been employed, that is to say, deal value per year divided by the revenue of the outsourcer or contractor. The rationale for this is that there are two possible hypotheses explaining the inverse relationship of the size of the outsourcer and the market reaction. One of these hypotheses argues that due to the relatively smaller size of the deal larger companies should experience smaller market reaction than smaller companies if both firms outsource a similar size function. Therefore, the relative deal size variable helps to explain whether the larger firm has worse market reaction due to informational asymmetry or purely due to the fact that the relative size of the deal is smaller. These variables are called DEAL SIZE and RELATIVE DEAL SIZE.

Deal length

Consistent with the previous research by Oh and Gallivan (2004) and Gao (2005) the length of the deal in years has been used as natural proxy for the deal length. This variable is called DEAL LENGTH.

Performance

Cumulative share price performance compared to the corresponding country index (calculated by Datastream) from the period starting 200 days before the announcement date and ending 20 days before the announcement date has been used a proxy for performance. The variable is called PERFORMANCE.

Level of agency costs

Several variables have been used as a proxy for the level of agency cost of the outsourcer. According, to Jensen (1986) the conflicts of interest between shareholders and managers over the payout policies are especially severe when firm generates substantial free cash flow, whereas large amounts of debt reduces the agency costs of the free cash flow. Therefore the amount of cash and short term investments divided by the total assets of the firm is used as a proxy for the level of agency cost. An alternative proxy that has been used is the total amount of debt divided by the total assets of the firm. The amount of the cash and debt have been divided by the total assets due to potential multicollinearity with the size variable. In addition to these two alternative proxies, also a third proxy, for the level of agency cost is used, namely, the shares owned by the managers of the firm. This variable has been chosen since a high ownership stake in the firm by the managers should align their motives with the shareholders' motives and thus reduce agency costs. However, it was not possible to obtain direct measure of managers' ownership in the firm but instead a Datastream data item called Closely Held Shares was used. This data item describes the percentage of shares owned by the managers in addition to some other blocks of shares and is thus not a perfect proxy. The variables are called CASH, DEBT and INSIDER OWNERSHIP respectively.

Reason for outsourcing

Two dummy variables have been defined to describe the reason for outsourcing. The first variable is called COST FOCUS and it assumes a value of one for announcements where cost savings have been explicitly mentioned and quantified and zero otherwise. Another dummy variable is TRANSFORMATIONAL ROLE that has been assigned a value of one for announcements, where revenue side transformational objectives have been mentioned as the primary reason for the outsourcing and zero otherwise. Judging, which announcements are transformational by their nature is somewhat subjective as there are no mandatory rules covering the disclosure of outsourcing contracts. There are, however, certain phrases that are commonly used when outsourcing contract is announced that have been used as a sign of transformational nature e.g. announcements where 'increased speed to market' has been stated as the primary strategic objective of the outsourcing contract have been classified as transformational.

Type of the announcement

Three different dummies have been used to describe the extent to which new information is released to the market. These variables are used to account for the different value of announcements to the investors due to the varied degree of new information in the announcements. The first variable is called INITIAL ANNOUNCEMENT and it assumes a value of one for outsourcing announcement that is the first announcement of a particular outsourcing contract and value of zero for multiple announcements after the initial announcement. Alternative variables called PRE ANNOUNCEMENT and POST ANNOUNCEMENT have also been employed. Variable PRE ANNOUNCEMENT is assigned a value of one when the announcement is not an announcement of actual contract but rather announcement of signing of memorandum of understanding or letter of intent related to the outsourcing contract and zero for all other announcements. Variable POST ANNOUNCEMENT assumes a value of one when the announcement confirms the fact that the already signed contract has actually been implemented e.g. the assets and employees have been transferred to the contractor. The different variables for the type of announcement have a rather high correlation and thus the use of them at a same time has been restricted in the models due to the multicollinearity reasons.

Firm risk

Consistent with the previous study by Oh and Kim (2004) as well as with Fama and French (1992) the standard deviation of daily stock returns from period starting 200 days before the announcement date and ending 20 days before the announcement date has been used as a proxy for firm risk. The variable is called STOCK RETURN VOLATILITY.

Growth opportunities

Consistent with Oh and Kim (2004) as well as with Fama and French (1992) market to book ratio has been used as a proxy for the growth opportunities of the firm. The variable is called MARKET TO BOOK.

Outsourcing structure – alliances

A dummy variable has been defined to describe the type of outsourcing structure. This variable is called ALLIANCE and it assumes a value of one if the outsourcer will retain a positive but less than 50% equity ownership in the outsourced entity (and if the new entity's main purpose is to serve the outsourcer's internal needs instead of selling its services to third parties).

Experience of contractor

A dummy variable has been defined to account for the experience of contractor. This variable is called CONTRACTOR EXPERIENCE and it assumes a value of one if the contractor belongs to a group of firms that have subjectively been chosen as the most experienced in the market. The judgement is based among other things on the size (revenue) of the contractor and on the number of deals that the contractor has announced. For IT contractors IBM, CSC, EDS, HP and Accenture are deemed as contractors having the most experience, whereas for EMS contractors the group consists of Flextronics, Sanmina, Sanmina-SCI, Celestica and Solectron. This variable is, however, highly correlated with the revenue of the contractor and for multicollinearity reasons not used in many of the models.

Table 3. Summary of explanatory variables and corresponding hypothesis
This table describes all the variables used in the regression model and links these variables into the hypothesis developed in Chapter 2. Expected sign for outsourcer and contractor denote the expected sign of the explanatory variable coefficients in the regression models for outsourcer and contractor excess returns respectively.

Variable	Hypothesis	Expected sign for outsourcer	Expected sign for contractor	Description
OUTSOURCER REVENUE	Size of the outsourcing firm	-		Firm characteristic
OUTSOURCER NET INCOME	Profitability of the outsourcing firm	+		Firm characteristic
CONTRACTOR REVENUE	Size of the contractor	-	-	Firm characteristic
FINANCIAL INSTITUTION	Industry classification	+		Firm characteristic
MANUFACTURING	Outsourcing type	+		Event characteristic
DEAL SIZE	Deal size	-	+	Event characteristic
RELATIVE DEAL SIZE	Deal size	-	+	Event characteristic
DEAL LENGTH	Deal length	-	+	Event characteristic
SHARE PRICE PERFORMANCE	Performance	+	+	Firm characteristic
CASH	Level of agency cost	+		Firm characteristic
DEBT	Level of agency cost	-		Firm characteristic
INSIDER OWNERSHIP	Level of agency cost	+		Firm characteristic
COST FOCUS	Reason for announcement	+	-	Event characteristic
TRANSFORMATIONAL ROLE	Reason for announcement	-		Event characteristic
INITIAL ANNOUNCEMENT	Type of the announcement	+	+	Event characteristic
PRE ANNOUNCEMENT	Type of the announcement			Event characteristic
POST ANNOUNCEMENT	Type of the announcement			Event characteristic
STOCK RETURN VOLATILITY	Firm risk	+		Firm characteristic
MARKET TO BOOK	Growth opportunities	+		Firm characteristic
ALLIANCE	Outsourcing structure - alliances	+	+	Event characteristic
CONTRACTOR EXPERIENCE	Experience of contractor	+	+	Firm characteristic

4.6. Description of the sample

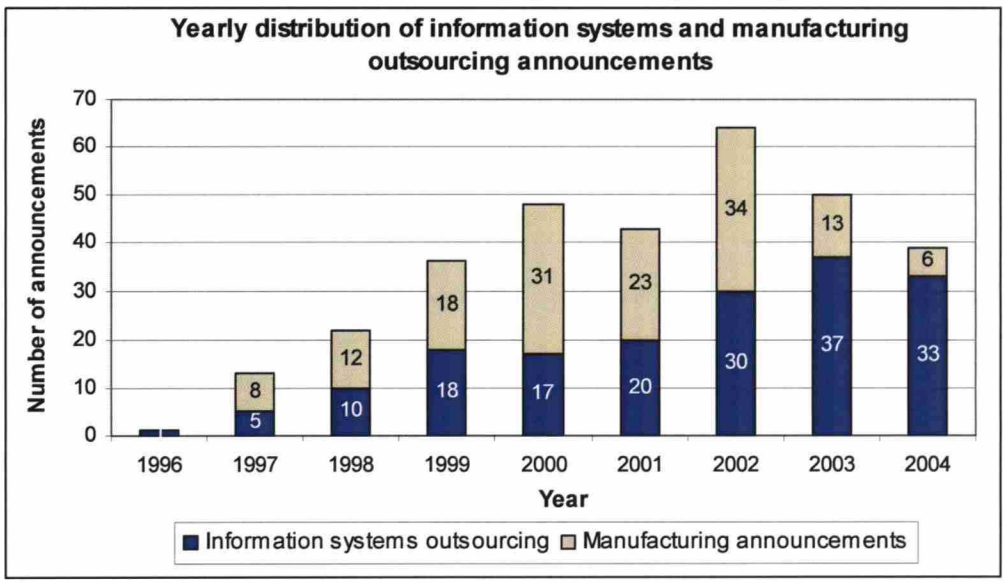
The sample is described in the following. All announcements are concerned with distinct and separate contracts and care was taken to avoid including repeated or duplicated announcements of the same outsourcing events unless they provide new information to the market.

Appendix 2 shows the correlation between the different variables in the sample. These correlations indicate the likelihood for multicollinearity. Multicollinearity and the corresponding measures to avoid it have been discussed by variable in the previous section. There are also a few interesting observation that can be made based on the correlation between the different variables. Firstly, outsourcing structure, i.e. alliances, appear to have an effect on the rationale for outsourcing. Transformational role is used as a justification for the outsourcing more often for alliances compared to normal outsourcing. This is in line with what is hypothesized, since alliances are assumed to be used as a vehicle particularly for strategically important outsourcing deals. Additionally, outsourcing contracts in alliances seem to be larger and longer compared to other outsourcing contracts. Secondly, according to the correlation analysis, financial institutions have stronger cost focus compared to other companies, when justifying outsourcing decisions. In another words, financial institutions quantify the expected cost savings from outsourcing more often than other companies, which could indicate that they are more cost conscious or experienced in outsourcing.

Yearly distribution of the outsourcing announcements

Figure 1 gives the distribution of the IS and EMS outsourcing announcements by year. The dominance of recent years in the sample may reflect more the difficulties in obtaining data for the years before 1999 rather than accurately reflecting the true occurrence of outsourcing in the market. The number of information systems outsourcing increases fairly steadily during the years, whereas the number of EMS outsourcing peaks in 2002 and then falls radically.

Figure 1. Yearly distribution of IS and EMS outsourcing announcements
This figure reports the number of information system and manufacturing outsourcing announcements that are included in the sample in each year for period 1996-2004.



Contract value

Figures 2 and 3 show the distribution of the total contract values and contract values per annum (total contract value divided with the length of the contract) separately for IS and EMS outsourcing announcements. Overall, contract sizes are fairly large in comparison with the revenues or market capitalization of the outsourcers and contractors, although there is large variation between IS and EMS outsourcing deals and also within these categories. The disclosed total contract values in the sample range from 10 to 30000 million euros and contract values per annum from 3 to 6000 million euros. The average total value of the contract is approximately 1550 million euros and the contract value per annum approximately 283 million euros. EMS outsourcing deals appear to be typically significantly larger and shorter in nature compared to IS outsourcing deals. For EMS outsourcing contracts the average total value is 2170 million euros compared to 1220 million euros for IS outsourcing contracts. Furthermore, the average value of contract per year is 520 million euros for EMS outsourcing contracts, compared to only 153 million euros for IS outsourcing contracts. The value of the average outsourcing contract per annum is equivalent to 3,0% of the total annual revenue of the outsourcers and 3,6% of the total annual revenue of contractor. Similarly, the value of the average outsourcing contract per annum is equivalent to 4,7% (median contract value is 1,0%) of the market capitalization of the outsourcer at the time of the announcement

and 5,2% (median contract value is 0,9%) of the market capitalization of the contractor. It can thus be concluded that the outsourcing deals included in the sample are significant enough to result in statistically significant market reaction, although there is a large variation in the absolute and relative size of the deals. There does not appear to be any trend between the contract size and the year.

Figure 2. Distribution of outsourcing contract value (total)
This figure reports the number of information system and manufacturing outsourcing announcements in six different categories based on the reported total contract value (in million $).

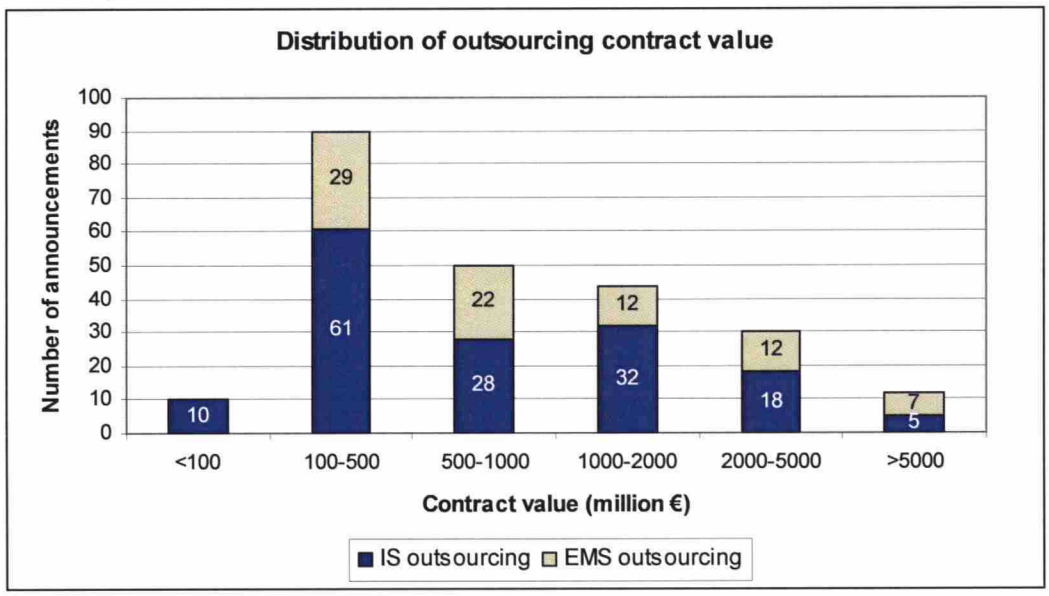
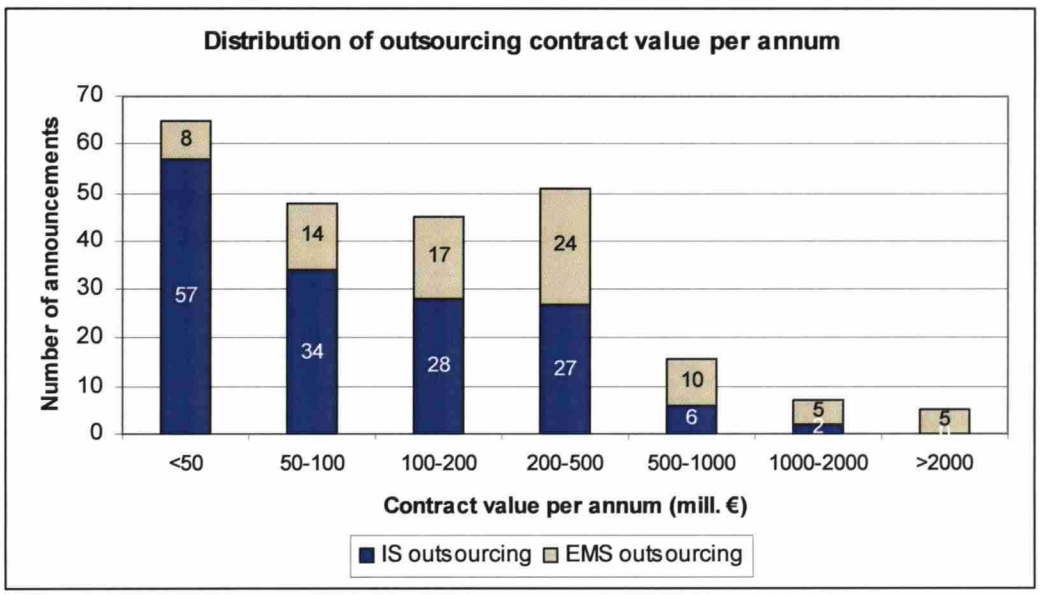


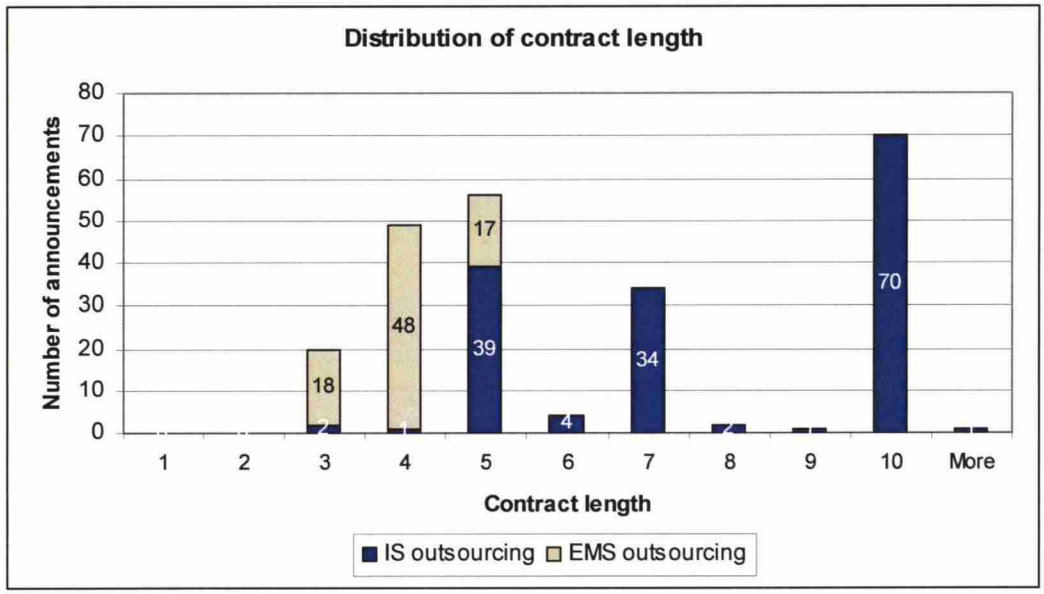
Figure 3. Distribution of outsourcing contract value per annum
This figure reports the number of information system and manufacturing outsourcing announcements in seven different categories based on the reported annual contract value (in million $ per year). Annual contract value is calculated by dividing the total contract value with the contract length.



Contract length

Figure 4 presents the distribution of the contract length for both IS and EMS outsourcing contracts. Similar, to the contract size, there does not appear to be any trend between the contract length and the year. As was already mentioned above, IS outsourcing contracts are typically significantly longer than EMS outsourcing contracts (and smaller as well). The average contract length for IS outsourcing deals is 7,8 years, compared to only 4,0 years for EMS outsourcing contracts. This could be a sign of the fact that companies consider manufacturing to be closer to the core of their business and therefore mitigate the risks of outsourcing by committing to only short contracts. All of the EMS outsourcing contracts for which length is given are either three, four, or five years in duration. The length of the IS outsourcing contracts varies between 3 and 15 years, although vast majority of the deals were five, seven or 10 years in duration. This is a clear sign of outsourcers and contractors following typical market practices when deciding on the terms and conditions of the outsourcing deals.

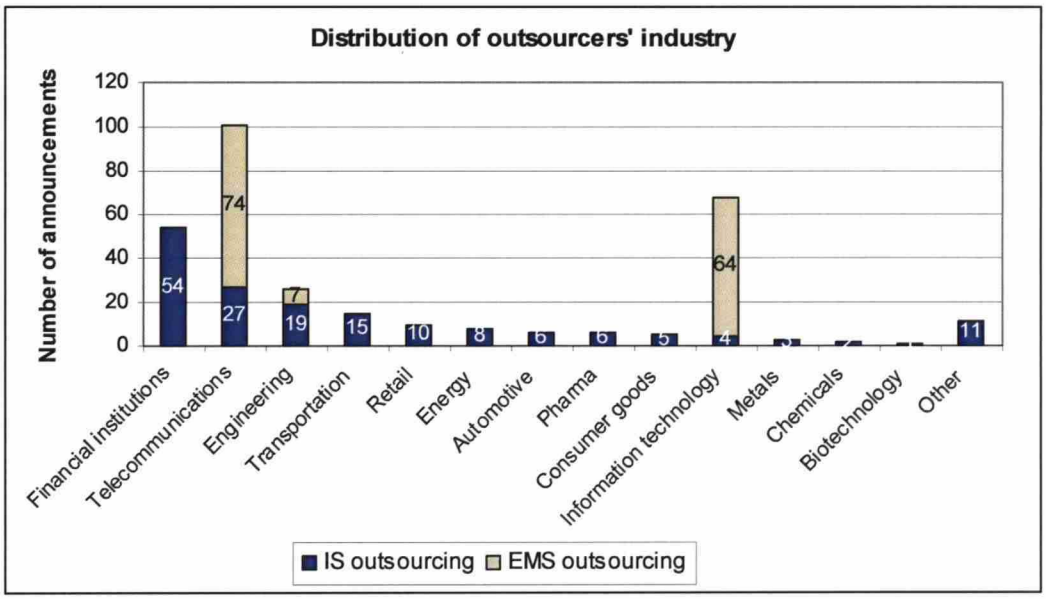
Figure 4. Distribution of contract length
This figure reports the number of information system and manufacturing outsourcing announcements in eleven different categories based on the reported contract length.



Industry of the information systems outsourcer

The distribution of outsourcers' industry is shown in figure 5. All EMS outsourcing announcements are given by companies that operate in the information technology, telecommunications or engineering industries, which is natural given the nature of the outsourcing. IS outsourcing announcements are divided more evenly across different industries, although almost one third of the announcements are given by financial institutions. Telecommunications and engineering companies are also active in IS outsourcing. Transportation sector is the fourth active IS outsourcer, mainly due to several airlines outsourcing their information systems. According to these results, it appears that IS outsourcing activity is to some extent related to the information intensiveness of the industry.

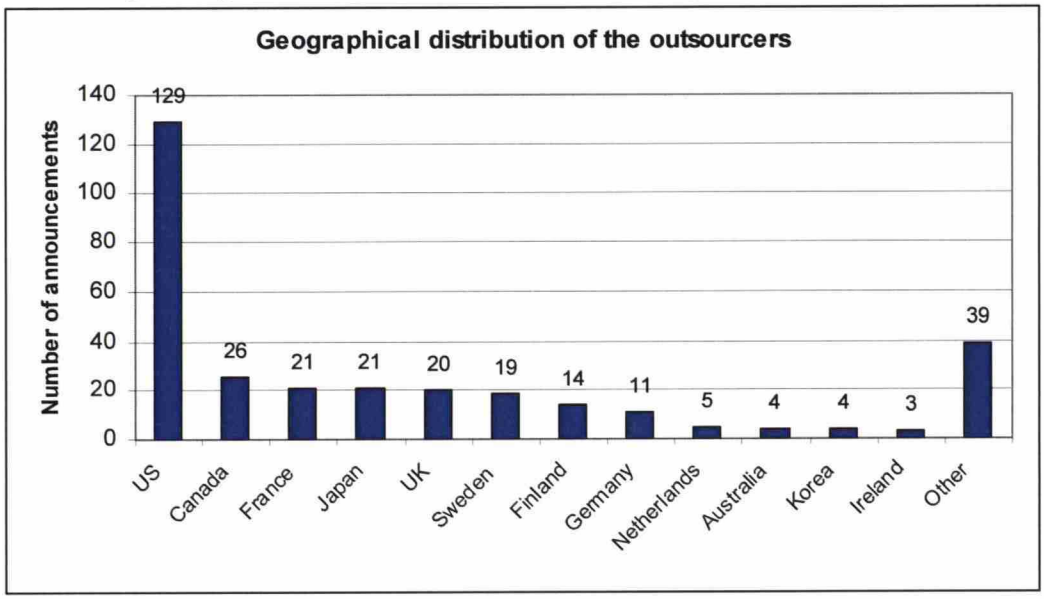
Figure 5. Distribution of outsourcers' industry
This figure reports the number of information system and manufacturing outsourcing announcements in fourteen different categories based on the industry of the outsourcer.



Geographical distribution of outsourcers

Figure 6 illustrates geographical distribution of the outsourcers. 41% of all the announcements are given by US companies (country of origin is based on the main stock exchange of the company). Again, this distribution may not accurately reflect the true distribution of outsourcing activity but rather is somewhat biased due to limited access on relevant data sources, e.g. the high share of Finnish and Swedish companies in the sample could be at least partly due to better availability of data.

Figure 6. Geographical distribution of the outsourcers (based on home stock exchange)
This figure reports the number of information system and manufacturing outsourcing announcements in thirteen different categories based on country of origin of the outsourcer. The country of origin is based on the main stock exchange of the outsourcer.



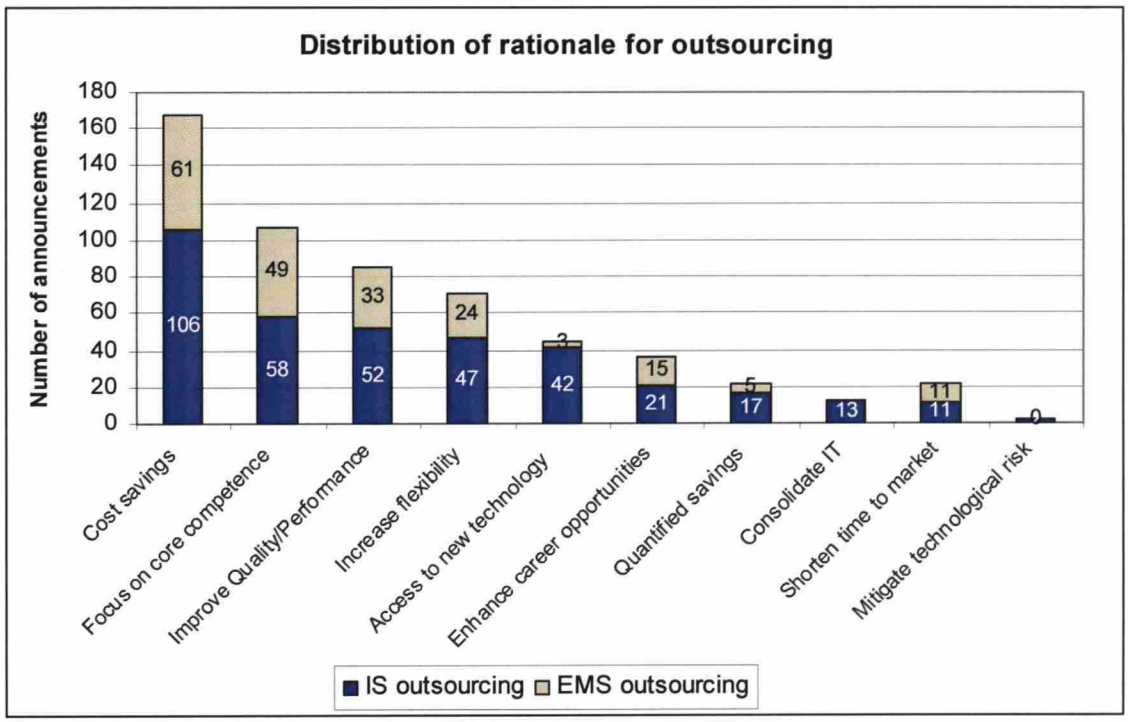
Reason for outsourcing

Figure 7 shows the different reasons for outsourcing and their frequency as disclosed by the outsourcers in the announcements. The reasons are mostly the same for both IS and EMS outsourcing deals. Cost savings and focus on core competencies are by far the most common rationales used by the outsourcer. All in all, the most common rationales used in the outsourcing announcements are in line with the previous research and theories related to the potential benefits of outsourcing (McLellan et al. 1995). More than half of all the announcements refer to cost savings as a reason to outsource (167 announcements). However, only in 22 announcements, the cost savings are quantified. This could imply that the outsourcers are not able to estimate the potential savings with sufficient accuracy in advance of the deal or that they are unwilling to disclose this information to the market. Furthermore, an interesting difference between IS and EMS outsourcing announcements is the fact that access to new technologies is used fairly often (altogether 42 times) as a rationale when justifying IS outsourcing deals, whereas in EMS outsourcing deals this rationale is used only in a few occasions (i.e. three times). It is somewhat surprising to find relatively many companies using focus on core competencies as one of the main rationales for their manufacturing outsourcing decision, since manufacturing is considered to be closer to the

core of the company. On the other hand, this may be a sign of transformation in the telecommunications, information technology and engineering industry towards more service oriented business model and thus redefinition of the value adding role of these companies. As a result, it can still be hypothesized that the EMS outsourcing announcements result in stronger market reaction due to stronger signalling effect.

Another interesting observation is the relationship between some of the rationales used and time. Particularly, flexibility is used extensively as a reason for outsourcing from 2002 to 2004, whereas in earlier years it has only rarely been mentioned.

Figure 7. Distribution of rationale for outsourcing
This figure reports the number of information system and manufacturing outsourcing announcements in ten different categories based on the reported rationale of outsourcing for the outsourcer. The total number exceeds the sample size since multiple rationales have been reported in most announcements.

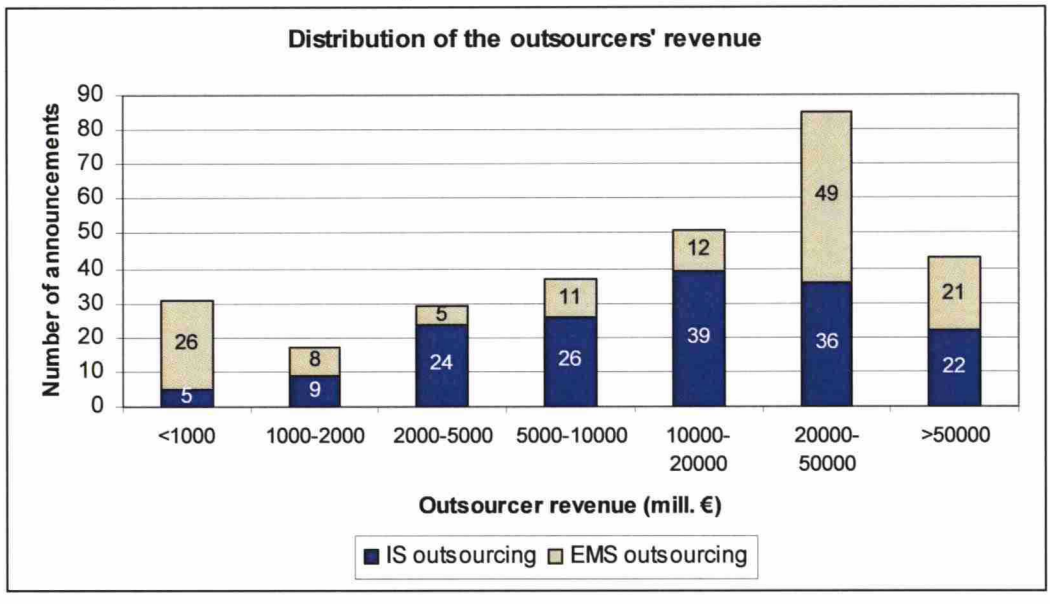


Size of outsourcers and contractors

Figure 8 and 9 give the revenue distribution of both the outsourcers and contractor. Companies making outsourcing announcements have a mean revenue of 24 493 million euros. Companies making IS outsourcing announcements have slightly lower average revenue of

23728 million euros compared to 25426 million euros with companies making EMS outsourcing announcements. The conclusion is that announcements are dominated by large companies, particularly for EMS outsourcing announcements. This could simply reflect the greater likelihood that large companies or their contractors will announce agreements, but there are also other possibilities. The large international contractors who dominate the outsourcing market could be less interested in small contracts, since most of the transaction costs involved in deal search and negotiation are fixed. Additionally, small companies may have more internal efficiency improvement opportunities and thus outsource less compared to large companies that have already utilized most of these internal measures. Another difference between IS and EMS outsourcers is the fact that IS outsourcers' revenue is relatively evenly distributed with most of the companies having fairly large revenue, whereas EMS outsourcers tend to be either very small (below 1000 million euros) or very large companies (more than 20000 million euros).

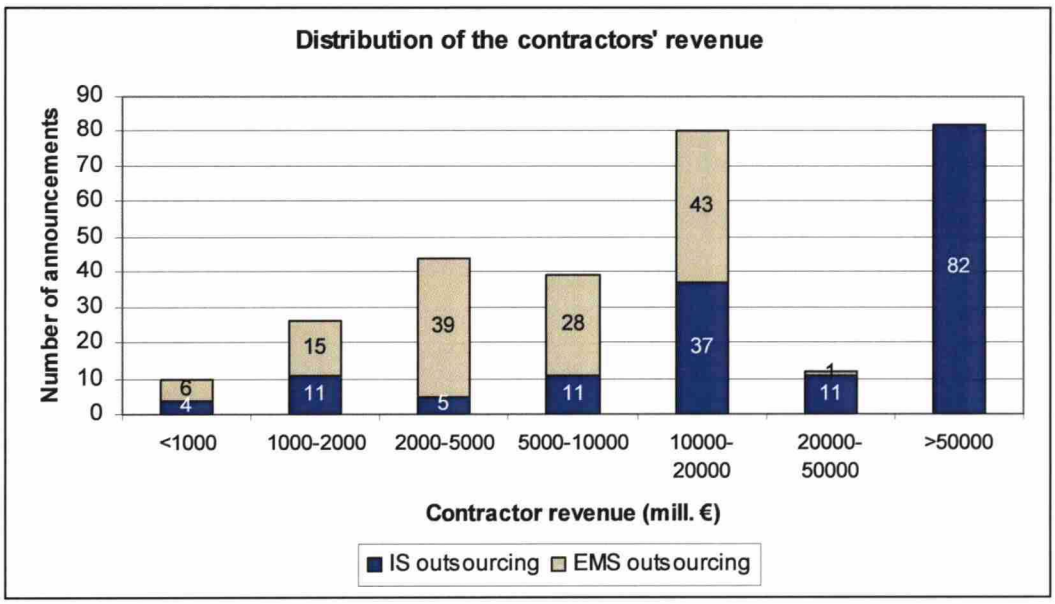
Figure 8. Distribution of outsourcers' revenue by announcement
This figure reports the number of information system and manufacturing outsourcing announcements in seven different categories based on the revenue of the outsourcer (in million $) at the end of the fiscal year when the announcement is made.



Outsourcing contractors mean revenue is 29491 million euros and it differs greatly between IS and EMS contractors. IS contractors mean revenue is 47198 million euros compared to only 7893 million euros for EMS contractors. This could imply that the EMS outsourcing

market is less developed, smaller and the contractor base is more fragmented, compared to IS outsourcing market, which is clearly dominated by a few large players.

Figure 9. Distribution of contractors' revenue by announcement
This figure reports the number of information system and manufacturing outsourcing announcements in seven different categories based on the revenue of the contractor (in million $) at the end of the fiscal year when the announcement is made.



Juma'h and Wood (2003) examined the relationship between the size of outsourcers and contractors and found a strong positive correlation. They divided the contractors into two groups based on the number of contracts in their database. The size of the outsourcing company was measured by the natural logarithm of market value and this was positively associated with the major outsourcing contractors with a Pearson correlation of 56% significant at the 1% level. Juma'h and Wood (2003) thus concluded that large companies use large contractors. I also examine the relationship between the size of outsourcers and contractors but contrary to the findings of Juma'h and Wood (2003) there appears to be no significant correlation. Correlation coefficient is only 11% for the IS outsourcing announcements and 13% for the EMS outsourcing announcements when applying similar methodology. Furthermore, the association is even weaker when the natural logarithms of outsourcers and contractors are used, 9% and 1% respectively for IS and EMS outsourcing announcements.

5. Analysis and results

The structure of the analysis and results part of this study is the following. First, the aggregate sample assessment of the size of the stock market reaction to an announcement to outsource all or portion of firm's IT or EMS is reported. Second, in order to gain further insight into the nature of the capital market response to the outsourcing announcement, the results from different subsamples are shown. Finally, due to the limitations in univariate analysis the effect of the different variables on the stock market reaction i.e. the results from the regression analysis are reported. In each of these steps the results for both the outsourcer and contractor are analyzed and reported separately. Additionally, the market reaction of the combined entity (market value-weighted average of outsourcer and contractor) is also analyzed and reported at the aggregate level. Furthermore, in each of these steps two alternative risk adjustment proxies and several different event windows have been employed in order to enhance the reliability of the results. In addition to this, some of the results are shown with standardization of excess returns. The results differed only when different event windows were applied, which increases the robustness and reliability of the results and conclusions.

5.1. Aggregate sample results

5.1.1. Outsourcer

The mean excess returns of the outsourcer are calculated using two risk adjustment proxies (MAR and MRAR). The results are shown in Table 4. Mean excess returns across the total sample and for most windows before and after the announcements are positive, though insignificant. Therefore, these results indicate that shareholders of the outsourcing firm experience a small wealth gain from outsourcing during the three-day period starting at the announcement day. The failure to observe significant excess returns for pre-announcement date windows suggests that there is little anticipation of the announcement. Similarly, the lack of significant returns in the longer post-announcement periods indicate that the market fully capitalizes the information content with the outsourcing announcement at the time of the announcement and during the two days after the announcement. The results are in line with what was hypothesized since it was expected that there might be positive, although fairly weak, market reaction to the outsourcing announcement. Furthermore, most of the previous

studies have found a positive reaction to the outsourcing announcement, although the results have been somewhat mixed as has already been discussed.

Table 4. Mean cumulative excess returns of outsourcers
This table reports mean cumulative excess returns (MCER) of outsourcers for the sample of 316 outsourcing announcements. Mean cumulative excess returns are calculated using two risk adjustment proxies: market adjustment (MAR) and market risk adjustment (MRAR). Mean cumulative excess return (MCER), t-test value (t-test) and statistical significance (p-value) are presented for 14 different event windows. *,**,*** denote statistical significance at 10%, 5% and 1% level respectively using two-tailed tests.

	MAR			MRAR		
	MCER	t-test	p-value	MCER	t-test	p-value
Announcement day						
[0]	0,01 %	0,05	0,961	0,06 %	0,36	0,719
Around the announcement						
[-20,20]	-0,45 %	-0,38	0,704	0,13 %	0,12	0,904
[-5,5]	0,23 %	0,37	0,712	0,30 %	0,51	0,610
[-2,2]	0,48 %	1,15	0,251	0,41 %	1,05	0,296
[-1,1]	0,20 %	0,63	0,529	0,17 %	0,58	0,563
Up to the announcement						
[-1,0]	0,04 %	0,14	0,892	0,06 %	0,23	0,815
[-2,0]	0,02 %	0,08	0,940	0,04 %	0,12	0,904
[-5,0]	-0,04 %	-0,09	0,926	-0,01 %	-0,02	0,980
[-20,0]	0,70 %	0,83	0,409	0,72 %	0,91	0,366
After the announcement						
[0,1]	0,18 %	0,67	0,503	0,18 %	0,73	0,466
[0,2]	0,46 %	1,44	0,152	0,43 %	1,44	0,151
[0,5]	0,28 %	0,61	0,540	0,37 %	0,86	0,389
[0,20]	-1,14 %	-1,35	0,180	-0,53 %	-0,66	0,511
[1]	0,17 %	0,90	0,369	0,12 %	0,67	0,502

An interesting detail in the results is the negative return for the outsourcers in the longest [0,20] event window. The possible explanations for this are discussed in the next sections, where the conclusions of the aggregate sample analysis are shown.

As can be seen, from the table 5 below the results are fairly similar also when the standardization of the mean excess returns is employed. The excess returns are, however, slightly less positive or even slightly negative at the announcement day and immediately after it. Furthermore, there seems to be a significant negative market reaction at the 10% significance level in the longest after the announcement event window, which is somewhat inconsistent with the results obtained without the standardization, although the excess returns in the longest event window are negative also in those cases.

Table 5. Scaled mean cumulative excess returns of outsourcers
This table reports scaled mean cumulative excess returns (scaled MCER) of outsourcers for the sample of 316 outsourcing announcements. Scaled mean cumulative excess returns are calculated by dividing the cumulative excess returns by the standard deviation of the firms' returns to account for the possibility of heteroskedasticity in the data. Scaled mean cumulative excess return (scaled MCER), t-test value (t-test) and statistical significance (p-value) are presented for 14 different event windows. *,**,*** denote statistical significance at 10%, 5% and 1% level respectively using two-tailed tests.

	Scaled (MRAR)		
	Scaled (MCER)	t-test	p-value
Announcement day			
[0]	-0,017	-0,34	0,738
Around the announcement			
[-20,20]	-0,310	-0,95	0,342
[-5,5]	-0,088	-0,52	0,601
[-2,2]	0,022	0,20	0,844
[-1,1]	-0,011	-0,13	0,898
Up to the announcement			
[-1,0]	-0,015	-0,21	0,833
[-2,0]	-0,034	-0,39	0,699
[-5,0]	-0,089	-0,71	0,476
[-20,0]	0,118	0,51	0,613
After the announcement			
[0,1]	-0,013	-0,18	0,855
[0,2]	0,039	0,45	0,655
[0,5]	-0,016	-0,13	0,896
[0,20]	-0,445	-1,91	0,057*
[1]	-0,058	-1,15	0,253

Thus, the preliminary analysis of the outsourcing announcements suggests that in aggregate, outsourcing leads to a small and insignificant value gain for the shareholders of the outsourcing firm during the three day period starting at the announcement day. However, there also seems to be small value loss during the 21-day period starting at the announcement day.

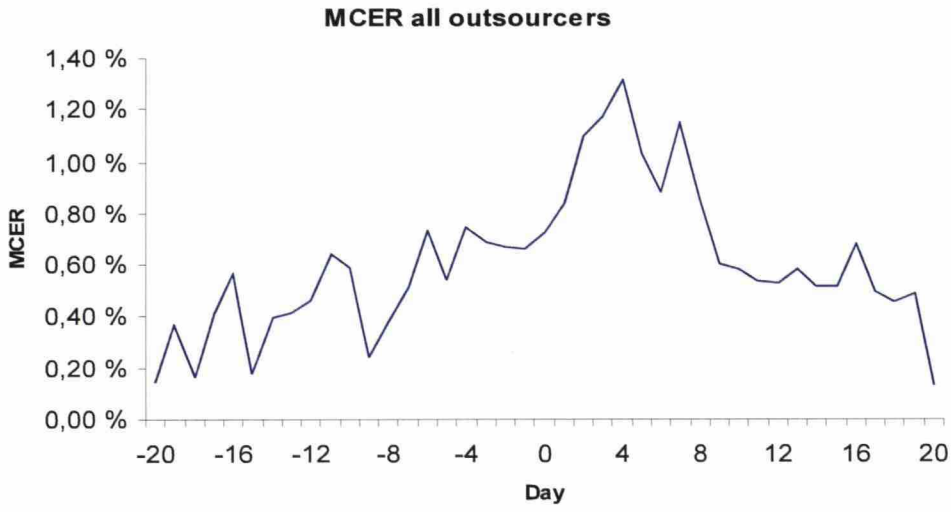
In addition to the percentage returns discussed above dollar returns of the outsourcer have been analysed. The mean excess returns in dollars of the outsourcer are calculated using risk adjusted excess returns (MRAR). The results are shown in table 6 below. Mean excess returns across the total sample and for all the windows before and after the announcements are negative. The negative reactions are highly significant in most cases. The results differ from the results of the percentage return analysis and are quite the opposite. This disparity could be an indication of a size effect in outsourcing announcement excess returns caused by inverse correlation between the market reaction and firm size i.e. the larger the firm the worse the market reaction.

Table 6. Mean cumulative dollar excess returns of outsourcers (in mill. $)
This table reports mean cumulative excess returns (MCER) of outsourcers for the sample of 316 outsourcing announcements in terms of value (in million $). Mean cumulative excess return is calculated using market risk adjusted excess returns (MRAR). Mean cumulative excess return (MCER), t-test value (t-test) and statistical significance (p-value) are presented for 14 different event windows. *,**,*** denote statistical significance at 10%, 5% and 1% level respectively using two-tailed tests.

	MRAR		
	MCER	t-test	p-value
Announcement day			
[0]	-190,3	-2,22	0,027**
Around the announcement			
[-20,20]	-1268,0	-2,31	0,022**
[-5,5]	-444,4	-1,57	0,119
[-2,2]	-282,1	-1,47	0,142
[-1,1]	-270,5	-1,83	0,070*
Up to the announcement			
[-1,0]	-151,8	-1,25	0,211
[-2,0]	-202,7	-1,37	0,173
[-5,0]	-203,6	-0,97	0,333
[-20,0]	-273,1	-0,70	0,487
After the announcement			
[0,1]	-309,0	-2,55	0,012**
[0,2]	-269,7	-1,82	0,071*
[0,5]	-431,1	-2,06	0,041**
[0,20]	-1185,3	-3,02	0,003***
[1]	-118,7	-1,39	0,167

Finally, the analysis of cumulative mean excess return during the 41-day event window, shown in Figure 10 below, also indicates that there is a small positive market reaction to outsourcing announcements at the announcement day and immediately after that, whereas the market reaction becomes negative during the 20-day period after the announcement.

Figure 10. Mean cumulative excess return of the outsourcers during 41-day period around the announcement day
This figure presents the mean cumulative excess return of the outsourcers for the sample of 316 outsourcing announcements during 41-day period, starting 20 days before the announcement day.



5.1.2. Contractor

The mean excess returns of the contractor are calculated using two risk adjustment proxies (MAR and MRAR). The results are shown in Table 7. Mean excess returns across the total sample and for most windows before and after the announcements are positive and significant. Particularly, at the announcement day the mean excess return is high and very significant. Moreover, the market reaction continues to be positive for the two-day period after the announcement and although the reaction is not significant for the individual days after the announcement the positive reaction has the highest t-value (and lowest p-value) for the [0,2] event window, instead of the announcement day. Therefore, these results indicate that shareholders of the contracting firm experience a significant wealth gain from outsourcing at the announcement day and in the following two days. The failure to observe significant excess returns for longer pre-announcement date windows suggests that there is little anticipation of the announcement. On the other hand, the fact that the excess returns for the two days just after the announcement are clearly positive though not significant (except for day +1 at the 10% significance level) suggests that the market does not fully capitalize the information content with the outsourcing announcement at the time of the announcement but instead there is a two day period after the announcement in which the adjustment continues to occur. This result is consistent with the findings from the outsourcing company analysis since

for the outsourcers the market reaction also appeared during the three-day period starting at the announcement day. Compared to the reaction of the outsourcer, the positive reaction of the contractor seems to be clearly stronger than the positive reaction of the outsourcer, suggesting that the market reaction of the combined entity is positive. The results are consistent with the expectations on the sign and magnitude of the market reaction as more positive reaction was anticipated compared to the outsourcers. These results are consistent with Gao's (2005) study, which also examined the market reaction of contractors.

Table 7. Mean cumulative excess returns of contractors
This table reports mean cumulative excess returns (MCER) of contractors for the sample of 305 outsourcing announcements. Mean cumulative excess returns are calculated using two risk adjustment proxies: market adjustment (MAR) and market risk adjustment (MRAR). Mean cumulative excess return (MCER), t-test value (t-test) and statistical significance (p-value) are presented for 14 different event windows. *,**,*** denote statistical significance at 10%, 5% and 1% level respectively using two-tailed tests.

	MAR			MRAR		
	MCER	t-test	p-value	MCER	t-test	p-value
Announcement day						
[0]	0,73 %	3,83	0,000***	0,74 %	3,96	0,000***
Around the announcement						
[-20,20]	-1,16 %	-0,95	0,345	-0,60 %	-0,50	0,616
[-5,5]	0,79 %	1,25	0,213	0,99 %	1,60	0,112
[-2,2]	1,42 %	3,33	0,001***	1,44 %	3,45	0,001***
[-1,1]	0,90 %	2,72	0,007***	0,93 %	2,86	0,005***
Up to the announcement						
[-1,0]	0,64 %	2,37	0,019**	0,60 %	2,27	0,024**
[-2,0]	0,84 %	2,56	0,011**	0,80 %	2,46	0,015**
[-5,0]	0,73 %	1,56	0,119	0,79 %	1,72	0,087*
[-20,0]	0,31 %	0,35	0,726	0,28 %	0,32	0,747
After the announcement						
[0,1]	0,99 %	3,67	0,000***	1,06 %	4,03	0,000***
[0,2]	1,30 %	3,95	0,000***	1,39 %	4,28	0,000***
[0,5]	0,79 %	1,69	0,092*	0,94 %	2,05	0,042**
[0,20]	-0,73 %	-0,84	0,403	-0,14 %	-0,16	0,873
[1]	0,26 %	1,36	0,176	0,32 %	1,74	0,084*

As can be seen, from the table 8 below the results are fairly similar, although slightly less significant, when the standardization of the mean excess returns is employed. Especially, the mean excess return at the announcement day is positive and highly significant as is the case without the standardization.

Table 8. Scaled mean cumulative excess returns of contractors
This table reports scaled mean cumulative excess returns (scaled MCER) of contractors for the sample of 305 outsourcing announcements. Scaled mean cumulative excess returns are calculated by dividing the cumulative excess returns by the standard deviation of the firms' returns to account for the possibility of heteroskedasticity in the data. Scaled mean cumulative excess return (scaled MCER), t-test value (t-test) and statistical significance (p-value) are presented for 14 different event windows. *,**,*** denote statistical significance at 10%, 5% and 1% level respectively using two-tailed tests.

	Scaled (MRAR)		
	Scaled (MCER)	t-test	p-value
Announcement day			
[0]	0,188	3,71	0,000***
Around the announcement			
[-20,20]	-0,165	-0,51	0,610
[-5,5]	0,256	1,52	0,129
[-2,2]	0,378	3,34	0,001***
[-1,1]	0,276	3,15	0,002***
Up to the announcement			
[-1,0]	0,185	2,58	0,011**
[-2,0]	0,224	2,55	0,012**
[-5,0]	0,210	1,69	0,092*
[-20,0]	0,044	0,19	0,849
After the announcement			
[0,1]	0,279	3,89	0,000***
[0,2]	0,342	3,90	0,000***
[0,5]	0,234	1,89	0,061*
[0,20]	-0,022	-0,09	0,926
[1]	0,091	1,79	0,075*

Thus, the preliminary analysis of the outsourcing announcements suggests that in aggregate, outsourcing leads to a significant value gain for the shareholders of the contracting firm. An interesting detail in the results is the slightly negative return for the contactors in the [0,20] and [-20,20] event windows. Although this reaction is not significant the fact that it is negative is somewhat surprising. The possible explanations for this are discussed in the next sections, where the conclusions of the aggregate sample analysis are shown.

In addition to the percentage returns discussed above dollar returns of the contractor have been analysed. The mean excess returns in dollars of the contractors are calculated using risk adjusted excess returns (MRAR). The results are shown in table 9 below. Mean excess returns in dollar across the total sample and for most of the windows before and after the announcements are negative, though not significant. The results are thus not consistent with the results of the percentage returns. This disparity suggests the existence of a significant size effect in outsourcing announcement returns for the contractors. Furthermore, the correlation appears to be negative between the contractor size and the market reaction, since the mean

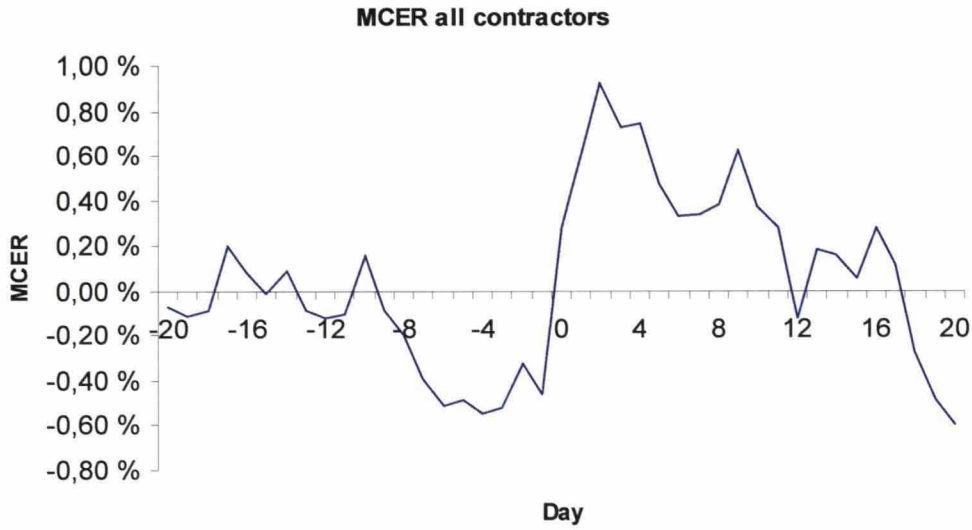
excess dollar returns are simply market value-weighted averages of the percentage returns of individual contractors. Similar correlation was observed also for outsourcing firms.

Table 9. Mean cumulative dollar excess returns of contractors (in mill. $)
This table reports mean cumulative excess returns (MCER) of contractors for the sample of 305 outsourcing announcements in terms of value (in million $). Mean cumulative excess return is calculated using market risk adjusted excess returns (MRAR). Mean cumulative excess return (MCER), t-test value (t-test) and statistical significance (p-value) are presented for 14 different event windows. *,**,*** denote statistical significance at 10%, 5% and 1% level respectively using two-tailed tests.

	MRAR		
	MCER	t-test	p-value
Announcement day			
[0]	-22,0	-0,25	0,800
Around the announcement			
[-20,20]	-741,0	-1,33	0,184
[-5,5]	-375,1	-1,30	0,194
[-2,2]	-110,8	-0,57	0,569
[-1,1]	-28,9	-0,19	0,847
Up to the announcement			
[-1,0]	-50,5	-0,41	0,681
[-2,0]	-150,7	-1,00	0,317
[-5,0]	-256,8	-1,21	0,228
[-20,0]	-655,0	-1,65	0,101
After the announcement			
[0,1]	-0,4	0,00	0,997
[0,2]	18,0	0,12	0,905
[0,5]	-140,4	-0,66	0,510
[0,20]	-108,0	-0,27	0,786
[1]	21,6	0,25	0,804

Finally, the analysis of cumulative mean excess return during the 41-day event window, shown in Figure 11 below, also indicates that there is a strongly positive market reaction to outsourcing announcements at the announcement day and during the following two-day period, whereas the market reaction over the 20-day period after the announcement is negative.

Figure 11. Mean cumulative excess return of the contractors during 41-day period around the announcement day
This figure presents the mean cumulative excess return of the contractors for the sample of 305 outsourcing announcements during 41-day period, starting 20 days before the announcement day.



5.1.3. Combined entity

The mean excess returns of the combined entity are calculated using the risk-adjusted excess return (MRAR). The results are shown in Table 10. The sign of the mean excess returns across the total sample varies a lot and depends on the window used. However, consistent with the expectations the mean excess return during the two-day period after the announcement that is positive, though not significant. However, at the announcement day the excess return is slightly negative. The fact that the market reaction was only slightly positive suggests that there is a size effect in the contractors/outsourcers excess returns, so that the larger the contractor/outsourcer is (i.e. the more weight is assigned on it) the worse the market reaction. This size effect is visible, although on average contractors are larger than outsourcers in the sample and thus the value-weighted portfolio of these two is biased to the direction of the contractor. This result was expected since, due to the significant size effect in both outsourcing and contracting firms' returns, the value-weighted market reaction was anticipated to be lower than simple average of the outsourcer and contractor returns.

Table 10. Mean cumulative excess returns of the combined entities
This table reports mean cumulative excess returns (MCER) of the combined entity of outsourcer and contractor for the sample of 305 outsourcing announcements. Mean cumulative excess return is calculated using market risk adjusted excess returns (MRAR). Mean cumulative excess return (MCER), t-test value (t-test) and statistical significance (p-value) are presented for 14 different event windows. *,**,*** denote statistical significance at 10%, 5% and 1% level respectively using two-tailed tests.

	MRAR		
	MCER	t-test	p-value
Announcement day			
[0]	-0,04 %	-0,29	0,776
Around the announcement			
[-20,20]	-1,47 %	-1,61	0,110
[-5,5]	-0,21 %	-0,43	0,664
[-2,2]	0,08 %	0,25	0,801
[-1,1]	-0,22 %	-0,90	0,370
Up to the announcement			
[-1,0]	-0,29 %	-1,46	0,147
[-2,0]	-0,29 %	-1,15	0,250
[-5,0]	-0,23 %	-0,65	0,518
[-20,0]	-0,49 %	-0,75	0,454
After the announcement			
[0,1]	0,03 %	0,16	0,876
[0,2]	0,33 %	1,31	0,190
[0,5]	-0,02 %	-0,06	0,954
[0,20]	-1,02 %	-1,55	0,122
[1]	0,07 %	0,51	0,613

Furthermore, consistent with the earlier results the excess return in the 21-day period after the announcement is negative, though not significant. Thus, the preliminary analysis of the outsourcing announcements suggests that in aggregate, outsourcing leads to a minor value gain for the combined entity during the three-day period starting at the announcement day. However, the market reaction at the announcement day and immediately after it differs from the market reaction over the 21-day period after the announcement. Final market reaction appears to be negative, since the returns for the combined entity in the longest event windows [-20,20] and [0,20] are negative. The possible explanations for the two-fold market reaction are discussed in the next sections, where the conclusions of the aggregate sample analysis are shown.

In addition to the percentage returns discussed above dollar returns of the combined entity have been analysed. The mean excess returns in dollars of the combined entity are calculated using risk adjusted excess returns (MRAR). The results are shown in table 11 below. Mean excess returns in dollar across the total sample and for all of the windows before and after the

announcements are negative and in most cases highly significant. This result is consistent with the results of outsourcers and contractors and it supports the existence of a size effect as discussed earlier.

Table 11. Mean cumulative dollar excess returns of combined entities (in mill. $)
This table reports mean cumulative excess returns (MCER) of the combined entity of outsourcer and contractor for the sample of 305 outsourcing announcements in terms of value (in million $). Mean cumulative excess return is calculated using market risk adjusted excess returns (MRAR). Mean cumulative excess return (MCER), t-test value (t-test) and statistical significance (p-value) are presented for 14 different event windows. *,**,*** denote statistical significance at 10%, 5% and 1% level respectively using two-tailed tests.

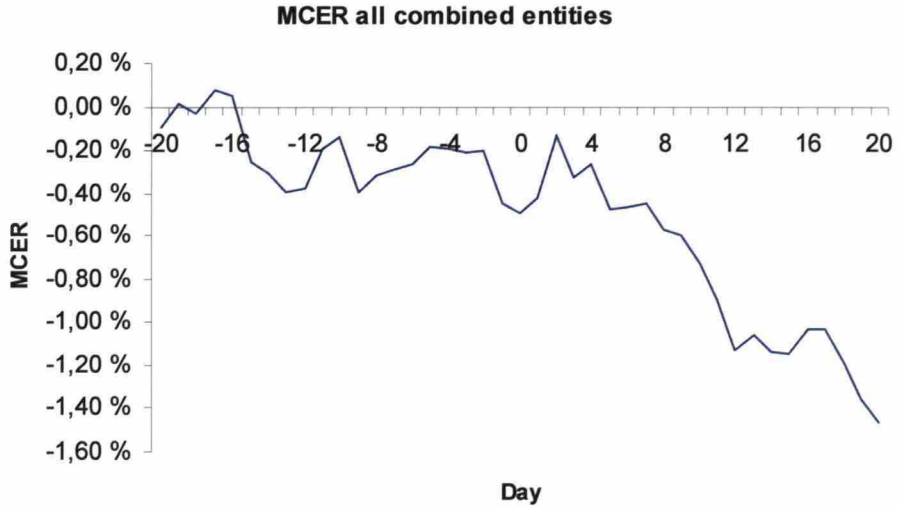
	MRAR		
	MCER	t-test	p-value
Announcement day			
[0]	-250,5	-2,00	0,047**
Around the announcement			
[-20,20]	-2088,5	-2,60	0,010**
[-5,5]	-896,4	-2,16	0,032**
[-2,2]	-407,1	-1,45	0,148
[-1,1]	-311,9	-1,44	0,153
Up to the announcement			
[-1,0]	-211,0	-1,19	0,235
[-2,0]	-401,9	-1,85	0,067*
[-5,0]	-547,1	-1,78	0,077*
[-20,0]	-1005,0	-1,75	0,082*
After the announcement			
[0,1]	-351,3	-1,98	0,049**
[0,2]	-255,6	-1,18	0,241
[0,5]	-599,7	-1,95	0,052*
[0,20]	-1334,0	-2,32	0,021**
[1]	-100,9	-0,80	0,422

* Statistical significance at the 0.10 level
** Statistical significance at the 0.05 level

Finally, the analysis of cumulative mean excess returns during the 41-day event window, shown in Figure 12 below, also indicates that there is a slightly positive market reaction to outsourcing announcements during the three-day period starting at the announcement day, whereas over the 20 period after the announcement the market reaction is clearly negative.

Figure 12. Mean cumulative excess return of the combined entities during 41-day period around the announcement day

This figure presents the mean cumulative excess return of combined entities for the sample of 305 outsourcing announcements during 41-day period, starting 20 days before the announcement day.



5.1.4. Aggregate sample results with reduced sample size

In the following, the aggregate sample size is reduced by excluding announcements, where the deal size and the deal length are not disclosed. This is done to test the robustness of the findings of the aggregate sample analysis, since it is anticipated that stronger results can be obtained by excluding announcements that contain materially less new information than the majority of the announcements. The announcements that do not contain specific information on the deal size and deal length may also disturb the results and lead to misleading conclusions. The results are shown in Table 12.

Table 12. Mean cumulative excess returns of outsourcers, contractors and combined entities applying reduced sample size

This table reports mean cumulative excess returns (MCER) of outsourcers, contractors and combined entities for the reduced sample of 223, 222 and 222 outsourcing announcements respectively. Mean cumulative excess returns are calculated using market risk adjusted excess returns (MRAR). Mean cumulative excess return (MCER), t-test value (t-test) and statistical significance (p-value) are presented for 14 different event windows. *,**,*** denote statistical significance at 10%, 5% and 1% level respectively using two-tailed tests.

	MRAR (outsourcer)			MRAR (contractor)			MRAR (combined)		
	MCER	t-test	p-value	MCER	t-test	p-value	MCER	t-test	p-value
Announcement day									
[0]	0,02 %	0,11	0,912	0,92 %	4,48	0,000***	0,14 %	0,94	0,347
Around the announcement									
[-20,20]	-0,10 %	-0,09	0,932	1,00 %	0,77	0,444	-0,69 %	-0,70	0,484
[-5,5]	0,44 %	0,72	0,472	1,88 %	2,78	0,006***	0,57 %	1,12	0,265
[-2,2]	0,23 %	0,56	0,578	1,70 %	3,73	0,000***	0,42 %	1,22	0,225
[-1,1]	0,04 %	0,13	0,896	1,38 %	3,91	0,000***	0,10 %	0,38	0,708
Up to the announcement									
[-1,0]	0,09 %	0,36	0,716	0,93 %	3,24	0,001***	0,01 %	0,03	0,975
[-2,0]	0,04 %	0,14	0,893	0,99 %	2,80	0,006***	0,03 %	0,12	0,902
[-5,0]	0,22 %	0,49	0,625	1,50 %	3,01	0,003***	0,42 %	1,13	0,259
[-20,0]	1,24 %	1,48	0,141	1,79 %	1,92	0,057*	0,83 %	1,19	0,236
After the announcement									
[0,1]	-0,03 %	-0,13	0,900	1,36 %	4,72	0,000***	0,24 %	1,10	0,275
[0,2]	0,21 %	0,65	0,517	1,63 %	4,60	0,000***	0,53 %	1,99	0,048**
[0,5]	0,24 %	0,53	0,595	1,30 %	2,59	0,010**	0,29 %	0,77	0,444
[0,20]	-1,32 %	-1,58	0,117	0,12 %	0,13	0,894	-1,38 %	-1,96	0,051*
[1]	-0,05 %	-0,29	0,773	0,45 %	2,19	0,030**	0,09 %	0,61	0,546

The results are quite similar compared to the results with larger sample size. There are, however, some differences in the sizes of the market reactions. Firstly, the positive market reaction of the outsourcers is smaller during the three-day period starting at the announcement day and even slightly negative at the announcement day. Furthermore, the positive market reaction of the contractor at the announcement day and immediately after that is stronger compared to the larger sample. As a result of these the excess return of the combined entity becomes positive at the announcement day and statistically significant for the three-day period starting at the announcement day. The negative excess return during the 21-day period after the announcement remains the same for the outsourcers and the combined entities, whereas for the contractors the excess return becomes slightly positive, though not significant.

5.1.5. Conclusions of the aggregate sample analysis

The results of the aggregate analysis indicate that shareholders of the outsourcing firm experience only a small wealth gain (0,21% to 0,46%) from outsourcing during the three-day period starting at the announcement day, whereas the shareholders of the contractors experience a much greater wealth gain (1,30% to 1,63%) from outsourcing during the same

period. Furthermore, the percentage excess returns for outsourcers are not statistically significant, whereas for contractors they are highly significant. Additionally, there appears to be a strong size effect in the percentage returns leading to negative dollar returns for outsourcers (-$270 million) and only slightly positive dollar return for ($18 million) contractors over the same three-day period. Due to the size effect the combined entity of outsourcer and contractor experience only a small wealth gain (0,33% to 0,53%) from outsourcing when percentage returns are employed. However, due to the size effect the mean excess return of the combined entities is clearly negative (-$256 million). Size effect is expected, due to the information asymmetry hypothesis. However, if the size effect is caused by information asymmetry only, larger firms should have less positive (or negative) market reaction compared to smaller firms but not negative as the results imply. For this reason, the findings from the aggregate hypothesis do not fully support the information asymmetry assumption, although there clearly is a size effect. The conclusion is that outsourcing is a price sensitive event, particularly for the contractors, who experience a significant wealth gain (percentually) from outsourcing. Outsourcing does not appear to be a zero-sum game, since both parties and the combination experience on average a percentually positive market reaction, although for outsourcer and combined entity this effect is not statistically significant and therefore this conclusion is not fully supported by the empirical evidence. However, due to the size effect the combined market reaction is negative if measured in absolute dollars. Therefore, it is concluded that outsourcing is not value adding per se but depends on the size of the outsourcer and contractor.

The failure to observe significant excess returns for pre-announcement date event windows suggests that there is little anticipation of the announcement. Similarly, the lack of significant returns in the longer post-announcement periods indicate that the market fully capitalizes the information content with the outsourcing announcement during the three-day period starting at the announcement day. However, although the positive market reaction for contractors is clearly largest and statistically significant at the announcement day the results suggest that the market does not fully capitalize the information content with the outsourcing announcement at the announcement day.

The results for the outsourcers are in line with what was hypothesized earlier since it was expected that there might be positive, although fairly weak, market reaction to the outsourcing announcement. Furthermore, most of the previous studies have found a significant positive

market reaction to the outsourcing announcement for outsourcers, and thus the results of this study are somewhat inconsistent with the earlier studies since the positive market reaction found in this study is rather weak and not statistically significant. The results for the contractors is consistent with the findings of Gao (2005) but contrary to the findings of Gellrich and Gewald (2005) as they found negative, though not significant market reaction for contractors during the three-day period starting at the announcement day. However, Gellrich and Gewald (2005) studied only financial institutions so the results are not fully comparable.

Finally, an interesting detail in the market reactions is that the market reactions of outsourcers, contractors and combined entities appear to be two-fold. In another words, the market reactions at the announcement day and immediately after it differs from the market reaction over the 21-day period after the announcement. Most of excess returns during the 21-day [0,20] and 41-day [-20,20] event window are negative. Although the reactions are not significant the fact that they are negative is somewhat surprising especially when compared to the clearly positive market reaction of contractors at the announcement day and immediately after that. There are at least three possible explanations for this phenomenon. First, it can be that the market does not fully capitalize the information content with the outsourcing announcement at the time of the announcement or even during the two-day period after that but instead there is a longer period during which the adjustment continues to occur. Furthermore, the initial market reaction seems to be positive and highly significant, whereas the final market reaction appears to be negative, though not significant. This implies that at first the outsourcing announcement is regarded as good news for the outsourcer/contractor but after a longer time has elapsed the market reaction becomes negative. Second possible explanation could be that, since roughly one fourth of the outsourcing events used in the sample of this study occurred during the time period of relatively high growth (1999-2000) of stock indices due to the high-tech 'bubble' and since the companies in the sample are not necessarily considered as high-tech (especially the outsourcers), the excess returns may be biased to be negative since the stock market performance of the outsourcers and contractors are compared to that of the overall country indices affected by the stock market hype. However, the fact that the market reaction (MCER) is significantly more negative during the 20 days after the announcement compared to the 20 days before the announcement is not consistent with the latter explanation. Finally, it is also possible that the results for the longest event windows are simply results of extraneous noise caused by other sources of information. The last explanation is assumed to be the most relevant in this study due to strong results at

the announcement day and during the three-day period after that for contractors. Furthermore, previous studies have not reported significant negative market returns for the 21-day period after the announcement.

5.2. Sub-sample results

The role of the different firm and outsourcing event characteristics is checked in the following by splitting the sample into two sub-samples according to the characteristic in question. Specifically, the role of outsourcing type, industry classification, and size of the outsourcer is examined to the market reaction of outsourcing firms. For contracting firms, the role of the outsourcing type, industry classification, size of the contractor, and outsourcing structure are examined.

Table 13 summarizes the results of the sub sample analysis using three day event window starting at the announcement day. Results from the sub-sample analysis indicate that the size of the market reaction of outsourcers is conditioned on the industry of the outsourcer, whereas the size of the market reaction of contractors is conditioned on the outsourcing type and structure as well as on the size of the outsourcer. Results and analysis for other event windows are reported in Appendix 3.

The results of sub-sample analysis does not clearly support the existence of size effect for the outsourcer. The three-day announcement period [0,2] mean excess return for smaller sized outsourcers is 1,50%, whereas for larger sized companies the mean excess return for same period is 0,12% when the full sample is used. This would indicate similar size effect that was found in the aggregate analysis. However, using the reduced sample these differences disappear since the excess returns for the same period are 0,22% and 0,23% respectively for smaller and larger sized firms.

For the contractor, the empirical evidence indicates strong size effect similar to that reported in the aggregate analysis. For smaller sized contractors the mean excess return during the three-day announcement period [0,2] is 2,56% compared to 0,95% for larger contractors. The same effect was found when the reduced sample was used, i.e. excess returns for the same period are 3,09% and 1,21% respectively for smaller and larger sized contractors. The

differences are statistically significant and also consistent with the findings from the aggregate sample analysis regarding the size effect.

The industry of the outsourcer appeared to have an effect on the size of the market reaction of outsourcers, i.e. the market reaction of financial institutions appear to be clearly weaker compared to other outsourcers. The three-day announcement period [0,2] mean excess returns for financial institutions are –0,87% and –1,01% (full and reduced sample respectively), while for other outsourcers the excess returns are 1,12 % and 1,07% (full and reduced sample respectively). The differences between these two groups are clearly statistically significant. For contractors the differences between the two groups are not statistically significant.

The outsourcing type appeared to have an effect only on the market reaction of the contractor. The three-day announcement period [0,2] mean excess returns of contractors for electronic manufacturing outsourcing announcements are 2.19% and 3.04% (full and reduced sample respectively), while for IS outsourcing announcements they are 0.75% to 0.95 % (full and reduced sample respectively). These differences are clearly statistically significant.

The outsourcing structure has a clear and significant impact on the market reaction of the contractor. The three-day announcement period [0,2] mean excess returns of contractors for outsourcing deals based on alliance structure are 5,38% and 5,38% (full and reduced sample respectively), while for other structures they are 1,19% and 1,39% (full and reduced sample respectively). These differences are clearly statistically significant, though the sample size is fairly low for alliance based outsourcing deals.

The results suggesting that there is a strong size effect in the market reactions of contractors, whereas for outsourcers the results are not as consistent. This is in line with what was hypothesized earlier for contractors. The observed size effect for contractors is also consistent with the earlier findings of aggregate sample analysis as well as with the previous study by Gao (2005). Also the positive impact of alliance structure on the market reaction of contractors is consistent with the hypothesis developed earlier. Nevertheless, the fact that the outsourcers' market reaction is clearly weaker for financial institutions compared to other firms is inconsistent with what was hypothesized earlier based on the higher informational intensity of financial institutions. This is also somewhat inconsistent with the results of Hayes et al. (2001). On the other hand, this result is consistent with the findings of Juma'h and

Wood (2003) for financial institutions. Finally, it was hypothesized that the manufacturing outsourcing announcements would have stronger market reaction than IS outsourcing announcement for the outsourcers. However, based on the sub-sample analysis this is true only for contractors, which was not anticipated.

Thus it seems that significant differences exist with regard to the capital market's reaction to outsourcing announcements. Based on the above statistical evidence it appears that investors distinguish between the various deals and base their evaluation of the newly formed outsourcing deal on the deal characteristics rather than on general considerations regarding outsourcing.

Table 13. Mean cumulative excess returns for different sub-samples
This table reports mean cumulative excess returns (MCER) of outsourcers and contractors for different sub-samples. Sub-samples are based on two different samples: full sample with 316 (outsourcers) and 305 (contractors) outsourcing announcements and reduced sample with 223 (outsourcer) and 222 (contractor) outsourcing announcements. Mean cumulative excess returns are calculated using market risk adjusted excess returns (MRAR). Mean cumulative excess return (MCER), t-test value (t-test) and statistical significance (p-value) are reported for 8 different sub-samples. *,**,*** denote statistical significance at 10%, 5% and 1% level respectively using two-tailed tests.

	Outsourcer's mean cumulative excess return			Contractor's mean cumulative excess return		
Full sample	MCER	t-test	p-value	MCER	t-test	p-value
Smaller sized firms	1,50 %	1,96	0,052*	2,56 %	3,87	0,000***
Larger sized firms	0,12 %	0,41	0,685	0,95 %	2,82	0,005***
Financial institutions	-0,87 %	-2,01	0,046**	1,02 %	1,61	0,109
Other firms	1,12 %	2,45	0,015**	0,62 %	1,60	0,112
Electronic manufacturing outsourcing	0,38 %	0,76	0,450	2,19 %	3,83	0,000***
Information system outsourcing	0,48 %	1,44	0,152	0,75 %	2,21	0,029**
Alliances				5,38 %	4,22	0,000***
Other structures				1,19 %	3,63	0,000***
Reduced sample						
Smaller sized firms	0,22 %	0,32	0,746	3,09 %	3,85	0,000***
Larger sized firms	0,23 %	0,68	0,497	1,21 %	3,28	0,001***
Financial institutions	-1,01 %	-2,08	0,039**	1,40 %	2,10	0,037**
Other firms	1,07 %	2,41	0,017**	0,75 %	1,90	0,060*
Electronic manufacturing outsourcing	-0,21 %	-0,35	0,728	3,04 %	3,75	0,000***
Information system outsourcing	0,43 %	1,22	0,224	0,95 %	2,76	0,006***
Alliances				5,38 %	4,22	0,000***
Other structures				1,39 %	3,84	0,000***

5.3. Regression results

Due to the limitations in univariate analysis the effect of the different variables on the stock market reaction around the announcement day is simultaneously examined using multivariate cross-sectional regression analysis. Several different multivariate cross-sectional regression models have been used in this study to examine the cross-sectional differences in the excess

returns for outsourcer and contractor. The objective is to test whether the explanatory variables support the corresponding hypothesis on their effect on the market reaction. In addition models have been chosen so that the effects of multi-collinearity are minimized. Furthermore, two alternative risk adjustment proxies and several different event windows have been employed in order to enhance the reliability of the results. Finally, some of the results are also shown with standardization of excess returns.

5.3.1. Outsourcer

Table 14, 15 and 16 present the findings from the regression analysis of the announcement period excess returns of outsourcers. The results of model 1 show that the revenue, net income (%) and industry of the outsourcer and the deal size are the only statistically significant variables.

OUTSOURCER REVENUE is negative and statistically highly significant. Consistent with earlier findings from both the aggregate and sub-sample analysis and with the hypothesis developed this result suggests that the market reaction is weaker for larger firms compared to smaller firms. Moreover, OUTSOURCER REVENUE variable is negative in all the models tested and statistically highly significant in most of the models. Based on this statistical evidence, there is strong empirical support for the existence of the size effect for outsourcer. The result is also consistent with the findings of Hayes et al. (2001) and Gao (2005).

FINANCIAL INSTITUTION variable is also negative and statistically significant. This result is consistent with the findings from the sub-sample analysis suggesting that the market reaction of financial institutions is worse compared to other firms. Furthermore, FINANCIAL INSTITUTION variable is negative in all the models tested and statistically significant in most of the models. This relationship is, however, contrary to the hypothesis developed earlier based on the higher informational intensity of financial institutions. The result is also contrary to the findings of Hayes at al. (2001) for the service firms, although the results of Juma'h and Wood (2003) for financial institutions were consistent with the results obtained in this study.

The results from model 1 also show that NET INCOME is positive and statistically significant. This result is consistent with the hypothesis developed earlier and suggests that companies with high profitability have greater stock market reaction compared to companies with lower profitability. Reliability of the result is enhanced by the fact that NET INCOME variable is positive in all the models tested and statistically significant in most of the models.

Finally, according to the results of model 1 also DEAL SIZE is positive and statistically significant. This result is contradictory with the hypothesis developed earlier and thus supports the counter-hypothesis, suggesting that larger deals have larger impact on the market values of the outsourcers compared to smaller deals. Furthermore, this result is also inconsistent with the findings of Oh and Gallivan (2004). This variable is positive in all the models and statistically significant in all the announcement day models using MRAR excess returns.

All the other variables were not statistically significant when two-tailed test at 0,10 significance level was used. However, if one-tailed test had been used, both CONTRACTOR REVENUE and TRANSFORMATIONAL ROLE would have become significant. CONTRACTOR REVENUE is positive and thus inconsistent with the hypothesis developed earlier, whereas TRANSFORMATIONAL ROLE is negative and consistent with the hypothesis developed earlier.

Models 2 and 3 are used to study the firm characteristics and outsourcing event characteristics separately, mainly due to potential multi-collinearity reasons. The results from these models support the above conclusions. Furthermore, model 2 with firm characteristics seems to have clearly higher explanatory power compared to model 3 with event characteristics.

In model 4 some of the variables that appear not to be significant based on the earlier empirical results are excluded due to multi-collinearity reasons. This also makes it possible to use larger sample size, since fewer events have to be removed due to lack of information on firm characteristics. Additionally, a new variable RELATIVE DEAL SIZE is included in the model in order to distinquish between the effects of the absolute deal size and relative deals size (deal size relative to the revenue of the firm). RELATIVE DEAL SIZE is negative and statistically significant, implying that announcements with larger relative deal size have worse impact on the market values than relatively smaller deals. This is opposite when compared to

the variable DEAL SIZE and inconsistent with what was hypothesized. However, the fact that in model 4 variable OUTSOURCER REVENUE is negative and still statistically highly significant implies that the effect of the size of the outsourcer is based on the differences in informational asymmetry as hypothesized earlier and not merely on the relative deal size.

In model 5 a slope dummy variable FINANCIAL INSTITUTION*REVENUE is specified and included. Results from model 5 show that this variable is positive and statistically significant, suggesting that the effect of the size (revenue) of the outsourcer is dependent on the industry of the outsourcer. In another words, there appears to be clear negative correlation between the excess returns and the size (revenue) of the outsourcer. However, the size effect is different for financial institutions and other firms. For financial institutions the size effect appears to be clearly smaller than for other firms. Furthermore, adding this slope dummy clearly improves the statistical significance of the FINANCIAL INSTITUTION dummy.

In models 6,7, and 8 the three-day period [0,2] excess return is regressed instead of the announcement day excess return. On overall level, the fitted models have higher explanatory power (statistical significance) than the announcement day models, suggesting that the markets do not fully capitalize the information content of outsourcing announcements at the day of the announcement, which is consistent with the earlier findings. The results of these three models are fairly similar to the announcement day models with a few exceptions and thus support the conclusions made earlier in this section. However, variable DEAL SIZE is not statistically significant in models 6 to 8, although it is still positive. Additionally, two variables that previously were not statistically significant become significant, that is to say DEAL LENGTH and STOCK RETURN VOLATILITY. DEAL LENGTH is positive and statistically significant, which is inconsistent with what was hypothesized earlier. STOCK RETURN VOLATILITY is also positive and highly statistically significant, which is consistent with the hypothesis on firm risk developed earlier. Also the fact that variable STOCK RETURN VOLATILITY is positive in all other models as well, although not always statistically significant increases the reliability of this result.

Finally, in models 9,10,11, and 12 the same variables as in model 5 are employed. In models 9 and 10 a different risk adjustment proxy (MAR) has been employed in calculating the announcement day and three-day period [0,2] excess returns. In models 11 and 12 the announcement day and three-day period [0,2] excess returns are scaled with the standard

deviation of the corresponding firms' share price. On overall level, the results are fairly similar to the previous models and support the main conclusions made earlier. Furthermore, these models have somewhat lower F-values and thus statistical significance than the corresponding earlier models. Variable NET INCOME is not statistically significant when scaling of excess returns is used and dummy variable FINANCIAL INSTITUTION is not statistically significant when different risk adjustment proxy (MAR) is used. However, also in these models the two variables would still be statistically significant at 0,10 significance level if one-tailed test were used.

Table 14. Regression analysis of outsourcer's announcement day excess returns
This table reports regression analysis of outsourcer's announcement day excess returns using different sets of explanatory variables. Expected sign column indicates the expected sign of the explanatory variable coefficients based on the hypothesis developed in Chapter 2. Tests are conducted in a sample of 210 or 223 (depending on selected variables) outsourcing contracts announced between 1996 and 2004. Excess returns are calculated using market risk adjusted excess returns. *, **, *** denote significance at the 10%, 5% and 1% respectively. T-tests conducted are two-tailed.

Variable	Expected Sign	Outsourcer's announcement day excess return				
		1	2	3	4	5
Intercept		0,00000	0,00471	0,02309	0,01308	0,04349
		0	-0,22	-1,32	-0,64	(2,27)**
OUTSOURCER REVENUE	-	-0,00485	-0,00435	-0,00239	-0,00500	-0,00685
		(-2,55)**	(-2,35)**	(-1,48)	(-2,51)**	(-3,07)***
OUTSOURCER NET INCOME	+	0,04752	0,04529		0,02926	0,02969
		(2,45)**	(2,40)**		(1,73)*	(1,77)*
CONTRACTOR REVENUE	-	0,00323	0,00165		0,00155	
		-1,48	-0,98		-1,14	
FINANCIAL INSTITUTION	+	-0,01141	-0,01127		-0,00694	-0,06892
		(-1,72)*	(-1,81)*		(-1,38)	(-2,00)**
MANUFACTURING	+	0,00003		-0,00226		
		0		(-0,44)		
DEAL SIZE	-	0,00434	0,00332		0,00376	0,00420
		(1,93)*	(1,74)*		(1,89)*	(2,12)**
RELATIVE DEAL SIZE	-				-0,05515	-0,07149
					(-1,47)*	(-1,88)*
DEAL LENGTH	-	0,00004	-0,00017			
		-0,04	(-0,18)			
OUTSOURCER STOCK PERFORMANCE	+	0,00219	0,00262			
		-0,39	-0,48			
CASH	+	-0,01209	-0,01094			
		(-0,63)	(-0,60)			
DEBT	-	0,00010	0,00010			
		-0,64	-0,7			
INSIDER OWNERSHIP	+					
COST FOCUS	+	-0,00662		-0,00431		
		(-0,79)		(-0,53)		
TRANSFORMATIONAL ROLE	-	-0,01013		-0,00668		
		(-1,57)		(-1,05)		
INITIAL ANNOUNCEMENT	+	-0,00580		-0,00599		
		(-0,89)		(-0,96)		
PRE ANNOUNCEMENT		-0,00944		-0,00932		
		(-1,21)		(-1,27)		
POST ANNOUNCEMENT		-0,00206		-0,00199		
		(-0,20)		(-0,20)		
STOCK RETURN VOLATILITY	+	0,26006	0,25988	0,20317	0,20725	0,19169
		-1,26	-1,26	-1,07	-1,16	-1,07
MARKET TO BOOK	+	-0,00035	-0,00039	-0,00028	-0,00039	-0,00023
		(-1,04)	(-1,18)	(-0,84)	(-1,21)	(-0,70)
ALLIANCE	+	0,00015		0,00681		
		-0,02		-0,71		
CONTRACTOR EXPERIENCE	+	-0,00568		0,00286		
		(-0,79)		-0,48		
FINANCIAL INSTITUTION*OUTSOURCER REVENUE						0,00669
						(1,86)*
Sample size		210	210	210	223	223
Adjusted R^2		0,014	0,022	-0,013	0,028	0,038
F statistics		1,151	1,428	0,748	1,795*	2,083**

Table 15. Regression analysis of outsourcer's cumulative excess returns
This table reports regression analysis of outsourcer's cumulative excess returns using different sets of explanatory variables and a three day event window starting at the announcement day [0,2]. Expected sign column indicates the expected sign of the explanatory variable coefficients based on the hypothesis developed in Chapter 2. Tests are conducted in a sample of 223 outsourcing contracts announced between 1996 and 2004. Cumulative excess returns are calculated using market risk adjusted excess returns. *, **, *** denote significance at the 10%, 5% and 1% respectively. T-tests conducted are two-tailed.

Variable	Expected Sign	Outsourcer's cumulative excess return		
		6	7	8
Intercept		0,01777	-0,00695	-0,02045
		-0,64	(-0,23)	(-0,78)
OUTSOURCER REVENUE	-	-0,00539	-0,00484	-0,00301
		(-1,67)*	(-1,50)	(-1,19)
OUTSOURCER NET INCOME	+	0,04971	0,04505	0,04995
		(2,03)**	(1,85)*	(2,10)**
FINANCIAL INSTITUTION	+	-0,09342	-0,0905378	-0,08172
		(-1,87)*	(-1,82)*	(-1,68)*
DEAL SIZE	-	0,00354	0,00389	0,00262
		-1,23	-1,36	-1,06
RELATIVE DEAL SIZE	-	-0,06276	-0,04946	
		(-1,14)	(-0,89)	
DEAL LENGTH	-		0,00229	0,00241
			(2,03)**	(2,14)**
STOCK RETURN VOLATILITY	+	0,82092	0,9025	0,90371
		(3,16)***	(3,46)***	(3,47)***
MARKET TO BOOK	+	-0,0001	-0,00004	-0,00006
		(-0,22)	(-0,09)	(-0,14)
FINANCIAL INSTITUTION*OUTSOURCER REVENUE		0,00852	0,00813	0,00721
		(1,64)*	-1,56	-1,42
Sample size		223	223	223
Adjusted R^2		0,065	0,079	0,08
F statistics		2,944***	3,111***	3,402***

Table 16. Regression analysis of outsourcer's announcement day and cumulative excess returns

This table reports regression analysis of outsourcer's announcement day and cumulative excess returns using different sets of explanatory variables. Expected sign column indicates the expected sign of the explanatory variable coefficients based on the hypothesis developed in Chapter 2. Event window varies in the different models, i.e. models 10 and 12 have a three day event window starting at the announcement day [0,2], whereas in models 9 and 11 only announcement day is included. In models 11 and 12 excess returns are calculated using market risk adjusted excess returns, whereas in models 9 and 10 market adjusted excess returns have been used. Tests are conducted in a sample of 223 outsourcing contracts announced between 1996 and 2004. *, **, *** denote significance at the 10%, 5% and 1% respectively. T-tests conducted are two-tailed.

Variable		Outsourcer's announcement day/cumulative excess return			
	Expected Sign	9 Market Adjusted [0]	10 Market Adjusted [0,2]	11 Scaled [0]	12 Scaled [0,2]
Intercept		0,03773	0,00196	0,01215	0,00728
		(1,83)	(0,07)	(1,74)*	(0,73)
OUTSOURCER REVENUE	-	-0,00629	-0,00371	-0,00211	-0,00192
		(-2,62)***	(-1,06)	(-2,60)**	(-1,67)**
OUTSOURCER NET INCOME	+	0,04138	0,0573	0,00733	0,01206
		(2,30)**	(2,18)**	(1,20)	(1,40)
FINANCIAL INSTITUTION	+	-0,05256	-0,07867	-0,02021	-0,0366
		(-1,42)	(-1,46)	(-1,65)*	(-2,07)**
DEAL SIZE	-	0,00334	0,00261	0,0018	0,00204
		(1,57)	(0,84)	(2,50)**	(2,01)**
RELATIVE DEAL SIZE	-	-0,07623	-0,02333	-0,02252	-0,01666
		(-1,87)*	(-0,39)	(-1,62)	(-0,85)
STOCK RETURN VOLATILITY	+	0,32457	0,91469	0,02775	0,11399
		(1,69)*	(3,27)***	(0,43)	(1,24)
MARKET TO BOOK	+	-0,00032	-0,00006	-0,00017	-0,00014
		(-0,91)	(-0,11)	(-1,39)	(-0,81)
FINANCIAL INSTITUTION*OUTSOURCER REVENUE		0,00522	0,0073	0,00186	0,00331
		(1,35)	(1,30)	(1,42)	(1,79)*
Sample size		223	223	223	223
Adjusted R^2		0,036	0,051	0,032	0,044
F statistics		2,036**	2,498**	1,912*	2,284**

5.3.2. Contractor

Tables 17 and 18 present the findings from the regression analysis of the announcement period excess returns of contractors. On overall level the models employed have clearly higher F-values and statistical significance than the models employed for outsourcers. This was expected since the positive market reaction for contractors is significantly higher compared to outsourcers.

The results of model 1 show that the size (revenue) and profitability (net income %) of the contractor and the size of the deal are the only statistically significant variables, when two-tailed test is employed at 0,10 significance level. However, also variables PERFORMANCE, MARKET TO BOOK, and ALLIANCE are statistically significant at 0,10 significance level if one-tailed test is employed. All the other variables are not consistently statistically significant and are thus not discussed in more detail.

CONTRACTOR REVENUE variable is negative and statistically highly significant. Consistent with earlier findings from both the aggregate and sub-sample analysis regarding the size effect this result suggests that the market reaction is weaker for larger contractors compared to smaller contractors. Additionally, this result is also consistent with what was hypothesized earlier based on the informational asymmetry. Moreover, CONTRACTOR REVENUE variable is negative and highly significant in all the models tested for contractors, further increasing the reliability of the result. Based on this statistical evidence, there is very strong empirical support for the existence of the size effect for contractor.

DEAL SIZE variable is positive and statistically very significant. This result is consistent with the hypothesis developed earlier, suggesting that larger deals have greater impact on the market value of the contactor than smaller deals. There is very strong empirical support also for this result due to the extremely high statistical significance of this variable in all the models tested for contractors.

Although not predicted, regressions are also run to test for a profitability effect of the contractor. The results of model 1 show that NET INCOME variable is negative and statistically significant, although only at the 0.10 significance level. This result is not as

consistent as the two other variables above since the NET INCOME variable is not statistically significant in any of the other models (except model 9) that are tested. Furthermore, when three-day announcement period excess returns are employed, the NET INCOME variable becomes highly insignificant, which thus decreases the reliability of this result.

ALLIANCE variable is positive but not statistically significant at 0,10 significance level when two-tailed test is used, which is somewhat surprising, since in the sub-sample analysis the mean excess return was found to be significantly higher for outsourcing deals based on an alliance compared to other forms of deals. The variable becomes statistically significant, however, when a slope dummy variable ALLIANCE*DEAL SIZE is added to the models, suggesting that outsourcing deals based on an alliance structure have better impact on the market value of the contractor than other outsourcing deals. This is consistent with the hypothesis developed earlier regarding the impact of alliance structure on the market reaction. Furthermore, the results imply that the positive relationship between deal size and the excess return is weaker for deals based on an alliance structure compared to other deals. The ALLIANCE variable is positive and statistically significant in all the models, where the slope dummy ALLIANCE*DEAL SIZE is present. Furthermore, the significance is higher in models, where three-day announcement period excess return is regressed, compared to the announcement day models.

According to the results of model 1 variable PERFORMANCE is negative but not statistically significant at 0,10 significance level if two-tailed test is used. PERFORMANCE variable is consistently negative in all the models but statistically significant only when three-day announcement period excess returns are regressed. The results suggest that weak share price development has positive impact on the market reaction, which is contrary to what was hypothesized earlier.

The results of model 1 also show that variable MARKET TO BOOK is positive but not statistically significant at 0,10 significance level if two-tailed test is used. MARKET TO BOOK variable is consistently positive in all the models but statistically significant only when scaled announcement day excess returns are employed. The results suggest that contractors with high growth opportunities have greater market reaction compared to

contractors with low growth opportunities. This result is consistent with the hypothesis developed earlier.

In Models 2 some of the variables that appear not to be significant based on the earlier empirical results are excluded due to multi-collinearity reasons. The results from this models support the conclusions made above regarding the significance of different variables.

In model 3 a new slope dummy variable ALLIANCE*DEAL SIZE is included in the model. Results from model 3 show that this variable is negative and statistically significant, suggesting that the effect of the size of the deal is dependent on the structure of the deal. In another words, there appears to be clear positive correlation between the excess returns and the size of the deal. However, the size effect is different for alliance based deals and other deals. For alliance based deals the size effect appears to be clearly smaller than for other deals. Furthermore, adding this slope dummy clearly improves the statistical significance of the ALLIANCE dummy and the statistical significance of the whole model.

In model 4 some of the variables that appear not to be significant based on the earlier empirical results are excluded due to multi-collinearity reasons. This clearly improves F-value and statistical significance of the whole model. The individual results regarding the statistical significance of the different explanatory variables remain the same as in model 3.

In model 5 a new variable DEAL SIZE RELATIVE is included in the model in order to distinguish between the effects of the absolute deal size and relative deal size (deal size relative to the revenue of the firm). DEAL SIZE RELATIVE is negative and statistically insignificant. Two conclusions are drawn based on this. Firstly, the fact that in model 5 variable CONTRACTOR REVENUE is negative and still statistically highly significant implies that the effect of the size of the contractor is based on the differences in informational asymmetry as hypothesized earlier and not merely on the relative deal size. Secondly, it also appears that it is the absolute deal size that is relevant for the size of the market reaction not the relative deal size.

In model 6 three-day period [0,2] excess return is regressed instead of the announcement day excess return using the same variables as in the model 3. On overall level, model 6 has higher explanatory power (statistical significance) than the announcement day model 3, suggesting

that the markets do not fully capitalize the information content of outsourcing announcements at the day of the announcement, which is consistent with the earlier findings. The results of this model are fairly similar to the announcement day.

Finally, in models 7,8,9, and 10 the same variables as in model 3 are employed. In models 7 and 8 a different risk adjustment proxy (MAR) has been employed in calculating the announcement day and three-day period [0,2] excess returns. In models 9 and 10 the announcement day and three-day period [0,2] excess returns are scaled with the standard deviation of the corresponding contractors' share price. On overall level, the results are fairly similar to the previous models and support the main conclusions made earlier. Furthermore, these models have somewhat lower F-values and thus statistical significance than the corresponding earlier models.

Table 17. Regression analysis of contractor's announcement day excess returns
This table reports regression analysis of contractor's announcement day excess returns using different sets of explanatory variables. Expected sign column indicates the expected sign of the explanatory variable coefficient based on the hypothesis developed in Chapter 2. Tests are conducted in a sample of 222 outsourcing contracts announced between 1996 and 2004. Excess returns are calculated using market risk adjusted excess returns. *, **, *** denote significance at the 10%, 5% and 1% respectively. T-tests conducted are two-tailed.

Variable	Expected Sign	Contractor's announcement day excess return				
		1	2	3	4	5
Intercept		0,02161	0,01544	0,01403	0,00672	0,00678
		(1,74)*	(1,52)	(1,40)	(1,72)*	(1,72)*
CONTRACTOR REVENUE	-	-1,275E-07	-1,667E-07	-1,735E-07	-1,601E-07	-1,626E-07
		(-1,64)*	(-2,50)**	(-2,62)***	(-2,74)***	(-2,56)**
CONTRACTOR NET INCOME		-0,07709	-0,07063	-0,06397	-0,0649	-0,06423
		(-1,71)*	(-1,63)	(-1,48)	(-1,58)	(-1,54)
FINANCIAL INSTITUTION		-0,00362				
		(-0,69)				
MANUFACTURING		-0,00065				
		(-0,09)				
DEAL SIZE	+	0,00002	1,616E-05	2,687E-05	2,645E-05	2,694E-05
		(3,98)***	(4,01)***	(4,25)***	(4,35)***	(3,51)***
RELATIVE DEAL SIZE	+					-0,00396
						(-0,10)
DEAL LENGTH	+	-0,00066	-0,00067	-0,00056		
		(-0,63)	(-0,79)	(-0,65)		
CONTRACTOR STOCK PERFORMANCE	+	-0,01023	-0,00941	-0,00847		
		(-1,58)	(-1,53)	(-1,39)		
DEBT		-0,00019				
		(-0,89)				
COST FOCUS	-	0,00043				
		(0,06)				
INITIAL ANNOUNCEMENT	+	-0,00356				
		(-0,68)				
STOCK RETURN VOLATILITY		-0,09342	-0,09655	-0,14919		
		(-0,50)	(-0,54)	(-0,84)		
MARKET TO BOOK		0,00095	0,00089	0,00089	0,00069	0,00069
		(1,60)	(1,54)	(1,54)	(1,26)	(1,26)
ALLIANCE	+	0,01181	0,01077	0,01783	0,01691	0,01676
		(1,31)	(1,22)	(1,91)*	(1,83)*	(1,79)*
ALLIANCE*DEAL SIZE				-1,743E-05	-1,791E-05	-1,751E-05
				(-2,18)**	(-2,30)**	(-2,00)**
Sample size		222	222	222	222	222
Adjusted R^2		0,136	0,150	0,165	0,167	0,163
F statistics		3,676***	5,871***	5,841***	8,400***	7,168***

Table 18. Regression analysis of contractor's announcement day and cumulative excess returns

This table reports regression analysis of contractor's announcement day and cumulative excess returns using different sets of explanatory variables. Expected sign column indicates the expected sign of the explanatory variable coefficients based on the hypothesis developed in Chapter 2. Event window varies in the different models, i.e. models 6, 8 and 10 have a three day event window starting at the announcement day [0,2], whereas in models 7 and 9 only announcement day is included. In models 6, 9 and 10 excess returns are calculated using market risk adjusted excess returns, whereas in models 7 and 8 market adjusted excess returns have been used. Tests are conducted in a sample of 222 outsourcing contracts announced between 1996 and 2004. *, **, *** denote significance at the 10%, 5% and 1% respectively. T-tests conducted are two-tailed.

Variable		Contractor's announcement day/cumulative excess return				
	Expected Sign	6 Market risk adjusted [0,2]	7 Market adjusted [0]	8 Market adjusted [0,2]	9 Scaled [0]	10 Scaled [0,2]
Intercept		0,00700	0,01531	0,00784	0,57656	0,77391
		(0,36)	(1,49)	(0,40)	(1,91)*	(1,34)
CONTRACTOR REVENUE	-	-2,848E-07	-1,618E-07	-2,787E-07	-7,888E-06	-1,236E-05
		(-2,21)**	(-2,39)**	(-2,17)**	(-3,97)***	(-3,24)***
CONTRACTOR NET INCOME		0,04193	-0,06781	0,02964	-2,2944	0,32912
		(0,50)	(-1,54)	(0,35)	(-1,77)*	(0,13)
DEAL SIZE	+	4,630E-05	2,409E-05	4,368E-05	0,00076	0,00113
		(3,76)***	(3,73)***	(3,56)***	(4,00)***	(3,10)***
DEAL LENGTH	+	-0,00084	-0,00055	-0,00089	0,00256	-0,01689
		(-0,51)	(-0,63)	(-0,54)	(0,10)	(-0,35)
CONTRACTOR STOCK PERFORMANCE	+	-0,0294	-0,00278	-0,01444	-0,23199	-0,68028
		(-2,47)**	(-0,44)	(-1,21)	(-1,27)	(-1,93)*
STOCK RETURN VOLATILITY		0,063602	-0,18014	0,02124	-11,896	-12,713
		(0,18)	(-0,99)	(0,06)	(-2,24)**	(-1,24)
MARKET TO BOOK		0,00126	0,00091	0,00158	0,03403	0,03960
		(1,12)	(1,55)	(1,41)	(1,97)*	(1,19)
ALLIANCE	+	0,03940	0,01948	0,04412	0,63900	1,2932
		(2,17)**	(2,05)**	(2,44)**	(2,29)**	(2,41)**
ALLIANCE*DEAL SIZE		-0,000008956	-0,00001668	-0,00001434	-0,00056	-0,00029
		(-0,57)	(-2,05)**	(-0,93)	(-2,34)**	(-0,63)
Sample size		222	222	222	222	222
Adjusted R^2		0,191	0,128	0,156	0,161	0,143
F statistics		6,797***	4,592***	5,527***	5,711***	5,083***

5.3.3. Conclusions of the regression analysis

5.3.3.1. Outsourcer

Evident presented in this section indicates that the market reaction of outsourcers announcing information technology or electronic manufacturing outsourcing agreements is strongly conditioned on the size, profitability and industry of the outsourcer. Based on the statistical evidence, there is strong empirical support for the significance of these three variables. Moreover, there is also empirical evidence of a combined effect between these variables since the effect of the size of the outsourcer appears to be dependent on the industry of the outsourcer. In addition to these three firm characteristics also the deal size and firm risk appeared to have an effect on the market reaction, although the empirical support is less consistent and somewhat mixed. Furthermore, the size effect found in the regression analysis supports the hypothesis that the value of the outsourcing deal is conditioned based on the degree of information asymmetry existing in the market. According to this study the capital market placed a higher value on outsourcing announcement information for higher asymmetry firms (i.e. small firms). The effect of the signalling value of the outsourcing deal announcement is still unclear. The hypothesis that higher agency costs lead to more positive market reaction to outsourcing announcements did not receive empirical support. Similarly, the hypothesis related to the rationale for outsourcing, outsourcing type, growth opportunities, type of announcement and contractor experience were not supported by the empirical results. The regression results for outsourcer are summarized in Table 19.

Most of the findings are consistent with what was hypothesized earlier. However, the fact that the market reaction is clearly weaker for financial institutions compared to other firms is contrary to what was anticipated based on the higher informational intensity of financial institutions. Similarly also the positive relationship between deal size and market reaction was inconsistent with the hypothesis developed earlier.

Compared to previous studies the results are somewhat mixed. The size effect found in this study is consistent with that of Hayes et al. (2001) and Gao (2005), although contrary to what is found by Juma'h and Wood (2003). On the other hand the less positive market reaction of financial institutions compared to other firms is supported by Juma'h and Wood (2003), whereas Hayes et al. (2001) found a contradicting relationship. The positive relationship

between the deal size and market reaction is consistent with the findings of Gao (2005) and Gellrich and Gewald (2005) and inconsistent with the findings of Oh and Gallivan (2004). A completely new finding that has not been reported in the earlier studies is the positive relationship between the profitability of the outsourcer and the market reaction. Also the somewhat less reliable result related to firm risk has not been reported before. Additionally, the combined effect of the industry and size of the outsourcer has not been reported in the earlier studies.

Finally, the fact that models with three-day announcement period [0,2] excess returns as dependent variable have consistently higher statistical significance than corresponding models with announcement day excess return suggests that the market does not fully capitalize the information content in the outsourcing announcement at the announcement day.

5.3.3.2. Contractor

Evidence presented in this section indicates that the market reaction of contractors of information technology or electronic manufacturing outsourcing agreements is strongly conditioned on the size of the outsourcer and on the size and structure of the outsourcing deal. Based on the statistical evidence, there is strong empirical support for the significance of these three variables, particularly for the size of the outsourcer and the size of the deal. Moreover, there is also empirical evidence of a combined effect between these variables since the effect of the size of the deal appears to be dependent on the structure of the deal i.e. whether the deal is alliance or not. In addition to these three firm and event characteristics also contractor's stock market performance and growth opportunities appeared to have an effect on the market reaction, although the empirical support is less consistent and somewhat mixed. Furthermore, the size effect found in the regression analysis supports the hypothesis that the value of the outsourcing deal for the contractor is conditioned based on the degree of information asymmetry existing in the market. According to this study the capital market placed a higher value on outsourcing announcement information for higher asymmetry firms (i.e. small firms) both in the case of contractors and outsourcers. The hypothesis related to the rationale for outsourcing, outsourcing type, type of announcement, deal length and contractor experience were not supported by the empirical results. The regression results for contractor are summarized in Table 19.

Most of the findings are consistent with what was hypothesized earlier. However, the fact that the market reaction is weaker for contractors with strong stock price performance is contrary to what was anticipated based on the better negotiation power. Additionally, the profitability of the contractor was not anticipated to have an effect on the market reaction, although (somewhat mixed) empirical support is found that there is a negative relationship between these two. There are only a few studies examining the market reaction of contractors. The positive relationship between deal size and market reaction and the negative relationship between contractor size and market reaction were confirmed also by Gao (2005). The reliability of these findings is reinforced by the fact that the relationship between market reaction and both contractor size and deal size were statistically highly significant both in Gao's (2005) and in this study. Gellrich and Gewald (2005) found opposite relationship for deal size and market reaction when examining financial institutions only. The impact of outsourcing structure has not been studied earlier.

Finally, the fact that models with three-day announcement period [0,2] excess returns as dependent variable have consistently higher statistical significance than corresponding models with announcement day excess return suggests that the market does not fully capitalize the information content in the outsourcing announcement at the announcement day. This is consistent with aggregate and sub-sample analysis and also with the findings from the outsourcing firms.

Table 19. Comparison of hypothesis and regression results by explanatory variable for outsourcer and contractor

This table presents the original hypothesis for each explanatory variable and compares that to the regression results for both the outsourcer and contractor. Expected sign column indicates the expected sign of the explanatory variable coefficients based on the hypothesis developed in Chapter 2. Actual sign column indicates the sign of the coefficients in the regression models. *, **, *** denote significance at the 10%, 5% and 1% respectively using two-tailed tests. Since several regression models have been used, significance by coefficient can vary somewhat depending on the model. Therefore, the significance reported in this table is an average of the models used in the study. (*) denotes that the variable has 10% significance in most of the models used but not in all of them.+/- indicates that the sign of the coefficient varies between the models.

Variable	Hypothesis	Outsourcer		Contractor	
		Expected sign	Actual sign	Expected sign	Actual sign
OUTSOURCER REVENUE	Size of the outsourcer	-	-*		
CONTRACTOR REVENUE	Size of the contractor	-	+	-	-**
OUTSOURCER NET INCOME	Profitability of the outsourcing firm	+	+**		
CONTRACTOR NET INCOME	Profitability of the contracting firm				+/-
FINANCIAL INSTITUTION	Industry classification	+	-*		-
MANUFACTURING	Outsourcing type	+	+/-		-
DEAL SIZE	Deal size	-	+(*)	+	+***
RELATIVE DEAL SIZE	Deal size	-	-	+	-
DEAL LENGTH	Deal length	-	+	+	-
OUTSOURCER STOCK PERFORMANCE	Performance	+	+		
CONTRACTOR STOCK PERFORMANCE	Performance			+	-
CASH	Level of agency cost	+	-		
DEBT	Level of agency cost	-	+		-
INSIDER OWNERSHIP	Level of agency cost	+	+		
COST FOCUS	Reason for announcement	+	-	-	+
TRANSFORMATIONAL ROLE	Reason for announcement	+	-		
INITIAL ANNOUNCEMENT	Type of the announcement	+	-	+	-
PRE ANNOUNCEMENT	Type of the announcement		-		
POST ANNOUNCEMENT	Type of the announcement		-		
STOCK RETURN VOLATILITY	Firm risk	+	+(*)		+/-
MARKET TO BOOK	Growth opportunities	+	-		+
ALLIANCE	Outsourcing structure - alliances	+	+	+	+*
CONTRACTOR EXPERIENCE	Experience of contractor	+	+/-	+	+/-

6. Discussion and conclusion

6.1. Discussion of central findings

Evidence presented in this study indicates that outsourcing is a price sensitive event, particularly for the contractor, who experiences a significant wealth gain (percentually) from outsourcing. Outsourcing does not appear to be a zero-sum game, since both parties and the combination experience on average a percentually positive market reaction using the three-day period starting at the announcement day, although for outsourcer and combined entity this effect is not statistically significant and therefore this conclusion is not fully supported by the empirical evidence. However, due to the size effect the combined market reaction is negative if measured in absolute dollars. Therefore, it is concluded that outsourcing is not value adding per se but depends on the size of the outsourcer and contractor in addition to several other firm characteristics.

Accordingly, shareholders of the outsourcing firm experience only a small wealth gain (0,46% and 0,21% full and reduced sample respectively) from outsourcing during the three-day period starting at the announcement day, whereas the shareholders of the contractors experience a much greater wealth gain (1,30% and 1,63% full and reduced sample respectively). Additionally, there appears to be a strong size effect in the percentage returns leading to negative dollar returns for outsourcers (-$270 million) and only slightly positive dollar return for ($18 million) contractors over the same three-day period. Due to this size effect the combined entity of outsourcer and contractor experience only a small wealth gain (0,33% to 0,53% full and reduced sample respectively) from outsourcing when percentage returns are employed. These results are in line with earlier studies reporting positive but insignificant market reaction for the outsourcer (Hayes et al. 2001; Gao 2005). Additionally, Gao (2005) reported statistically significant positive reaction for contractor consistent with the findings of this study.

Significant differences exist with regard to the capital market's reaction to outsourcing announcements among both outsourcers and contractors. Based on the statistical evidence it is concluded that investors appear to distinguish between the various deals and base their evaluation of the newly formed partnership on the deal characteristics rather than on general considerations regarding outsourcing. Consequently, the market value of outsourcing firms

announcing electronic manufacturing and information systems outsourcing contracts is conditioned on the size, profitability and industry of the firm. Based on the statistical evidence, there is strong empirical support for the significance of these three variables. For smaller firms, market values are significantly positively impacted by the decision to outsource manufacturing or information technology, whereas for larger firms the impact is weaker. Outsourcing firms with high profitability appear to have greater stock market reaction when compared to companies with lower profitability. Additionally the market values of financial institutions are more negatively affected by the outsourcing deal when compared to other firms. Moreover, there is also empirical evidence of a combined effect between these variables since the effect of the size of the outsourcer appears to be dependent on the industry of the outsourcer. In addition to these three firm characteristics also the deal size and firm risk appeared to have an effect on the market reaction, although the empirical support is less consistent and somewhat mixed. The size effect found in this study supports the hypothesis that the value of the outsourcing deal is conditioned on the degree of information asymmetry existing in the market. According to this study the capital market placed a higher value on outsourcing announcement information for higher asymmetry firms (i.e. small firms). Similar size effect has been reported also by Hayes et al. (2001) and Gao (2005).

Since outsourcing announcements are one of the few direct signals management can give to demonstrate to shareholders that shareholder value is taking precedence over managerial objectives related to firm size or employment, they were expected to have strong signalling value. However, the statistical evidence does not support this hypothesis. The hypothesis that higher agency costs of outsourcer would lead to more positive market reaction to outsourcing announcements does not receive any empirical support. Additionally, the size of the mean excess return of outsourcers during the three-day period is relatively low when compared to the gross amount involved in the average outsourcing deal recorded in the sample (in the order of 1% to 5% of the originating companies depending whether median or average is used) so that the stock market reaction can be based solely on the direct monetary benefits of the outsourcing deal. Juma'h and Wood (2003) used the relatively large magnitude of market reaction compared to the average contract value as an evidence of signalling effect. Finally, electronic manufacturing outsourcing announcements were anticipated to carry a stronger signalling value compared to information system outsourcing announcements due to their core nature. However, empirical support for this hypothesis is not found since the stock market reaction to these two types of outsourcing does not differ significantly. Consequently,

there is no empirical support on the existence of the signalling value component of outsourcing announcements. In another words, based on the statistical evidence it can not be concluded that outsourcing announcement carries a strong signalling effect of enhanced shareholder focus. However, based on the statistical evidence outsourcing announcements together with firm characteristics carry other types of signalling effects, e.g. related to the motives of outsourcing, which have impact on the market reaction.

The strong positive relationship between outsourcing firm's profitability and the market reaction to outsourcing announcement is expected to be a consequence of the fact that the profitability correlates inversely with the probability that a company is outsourcing IT or manufacturing solely to immediately reduce costs. Consequently, firm's with low profitability are then less likely to separate nonvalue-added functions from value-added core competency functions that should remain in the firm leading to worse market reaction. Therefore, it is concluded that outsourcing is a highly sensitive business exchange that requires rigorous analysis and in-depth understanding on the cost and revenue drivers in order to be successful. Furthermore, outsourcing deals are often sweetened with financial incentives, such as stock purchases, loans at low interest rates, and postponed payments (Lacity and Hirschheim 1993), which increases the short-term attractiveness of outsourcing especially for financially weak companies. However, based on the statistical evidence markets appear to understand this and see through any short-term attempts to improve cash flow and profitability through outsourcing. The impact of outsourcing firm's profitability on the market reaction has not been studied before and therefore this statistically strong result provides new insights into the capital markets reaction on outsourcing announcements.

Financial institutions' market reaction on outsourcing announcements is worse compared to other firms. This relationship between the industry of the outsourcer and market reaction is opposite to what was hypothesized. This is, however, consistent with the findings of Gellrich and Gewald (2005). This result indicates that outsourcing activities closer to the core of the company has a worse market reaction compared to outsourcing non-core activities. Following the rationale of Gellrich and Gewald (2005), potential explanation for this could be that outsourcing non-core activities leads to saving resources to be used in core activities and ultimately leading to an enhanced competitive position. Additionally, outsourcing non-core processes could be less risky, compared to outsourcing activities closer to the core. Alternative explanation for the result observed could relate to the fact that financial industry is

the second largest buyer of outsourcing services, just after public bodies (Galdwell 2003). Therefore, it is more likely that 'quick wins' have already been captured in this industry and the remaining outsourcing contracts are more complex and challenging in nature, which is also recognized by the capital markets.

The hypothesis related to the rationale for outsourcing, growth opportunities, type of announcement and contractor experience were not supported by the empirical results.

Similarly to the outsourcers, also among contractors there exist significant differences with regard to the capital market's reaction to outsourcing announcements. Based on the statistical evidence the market reaction of contractor of information technology or electronic manufacturing outsourcing deal is strongly conditioned on the size of the outsourcer and on the size and structure of the outsourcing deal. The empirical support for the significance of these three variables is strong. Moreover, there is also empirical evidence of a combined effect between these variables since the effect of the size of the deal appears to be dependent on the structure of the deal i.e. whether the deal is alliance or not. In addition to these three firm and event characteristics also contractor's stock market performance, growth opportunities and profitability appeared to have an effect on the market reaction, although the empirical support is less consistent and somewhat mixed. Similarly to the outsourcers, the size effect of contractors observed supports the hypothesis on the information asymmetry being one of the determinants of the market reaction. The negative relationship between contractor size and market reaction were confirmed also by Gao (2005). The reliability of this finding is reinforced by the fact that the relationship between market reaction and contractor size was statistically highly significant both in Gao's (2005) and in this study.

Size of the deal has a positive relationship with the market reaction of contractor, which is consistent with what was hypothesized earlier. I hypothesized that the relationship would be positive due to the increased dependency of the outsourcer to the contractor. Additionally, since these deals are core business of the contractor, it is only natural that the larger the deal the better the market reaction, provided that the deal is attractive for the contractor. This result is also consistent with the most recent studies by Gao (2005) and Gellrich and Gewald (2005), who found similar relationship. The reliability of this finding is reinforced by the fact that the relationship between market reaction and deal size was statistically highly significant both in Gao's (2005) and in this study.

Outsourcing deals based on an alliance are rewarded by markets for contractors. This is consistent with what was hypothesized earlier. However, it is surprising that the positive relationship between alliance and market reaction applies only to contractors and not to outsourcers. It has been assumed that, if the deal is structured in alliance, it is likely to be strategically important and have higher probability of success. Therefore, the positive relationship should apply to both outsourcer and contractor. Particularly, since the market reaction of outsourcing announcement is clearly more positive for contractors compared to outsourcers, one would expect outsourcers to benefit from the alliance, which is hypothesized to increase the likelihood for success. Potential explanation for this disparity could be that, since alliance based outsourcing contracts are hypothesized to be strategically important and comprehensive, the winning contractors of such deals are perceived to be the most competitive in the industry, thus resulting in more positive market reaction. However, it is difficult to develop solid rationale for this result, without more detailed knowledge on the typical terms and conditions in these alliance structures. Moreover, there are no previous studies, testing hypothesis related to outsourcing structure.

The failure to observe significant excess returns for pre-announcement date event windows suggests that there is little anticipation of the announcement. Similarly, the lack of significant returns in the longer post-announcement periods indicate that the market fully capitalizes the information content with the outsourcing announcement during the three-day period starting at the announcement day. However, although the positive market reaction for contractors is clearly largest and statistically significant at the announcement day the results suggest that the market does not fully capitalize the information content with the outsourcing announcement at the announcement day. Most of the announcements in my database are based on online sources, which is probably the main reason for significant reaction still during the two days after the initial announcement.

Table 20 below summarizes the results of this study by comparing the initial hypotheses with the results of the aggregate, sub-sample and regression analysis.

Table 20. Comparison of results and hypotheses

This table summarizes the results of this study by comparing them with the initial hypotheses. All mean cumulative excess returns (univariate analysis) reported are based on market risk adjusted excess returns using the full sample size and three day event window starting at the announcement day, unless otherwise stated. 10, 5 and 1 percent significances for regression variables are based on average significance level in the different regression models similar to Table 19.

	HYPOTHESIS	RESULTS
H1	**Outsourcer:** The mean cumulative excess return for the aggregate sample of outsourcing firms is significantly different from zero	**Outsourcer:** Positive but statistically insignificant mean cumulative excess return (0,43%)
	Contractor: The mean cumulative excess return for the aggregate sample of contractors is significantly different from zero	**Contractor:** Positive and highly significant mean cumulative excess return (1,39%)
	Combined entity: The mean cumulative excess return for the aggregate sample of combined entities is significantly different from zero	**Combined entity:** Positive but insignificant mean cumulative excess return (0,33%)
H2	**Outsourcer:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions will have better impact on the market values of firms that have high profitability than on firms with low or negative profitability.	**Outsourcer:** Positive relation between profitability and market reaction is supported at 5 percent level in the regression (multivariate) analysis
H3	**Outsourcer:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions will have greater impact on the market values of smaller firms than on the market values of larger firms	**Outsourcer:** Negative relation between outsourcer size and market reaction is supported at 10 percent level in the regression (multivariate) analysis. Sub-sample analysis with full sample supports this finding (1,50% vs. 0,12% mean cumulative excess return for small and large firm sub-samples respectively)
	Contractor: The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions will have greater impact on the market values of smaller contractors than on the market values of larger contractors	**Contractor:** Negative relation between contractor size and market reaction is supported at 5 percent level in the regression (multivariate) analysis. Sub-sample analysis with full sample supports this finding (2,56% vs. 0,95% mean cumulative excess return for small and large firm sub-samples respectively).
H4	**Outsourcer:** The market's reaction to IS or manufacturing outsourcing announcements will be inversely related to the size of the contractor	**Outsourcer:** No support is found as regression analysis indicates statistically insignificant positive relation.
H5	**Outsourcer:** The announcement to contract all or portion of a firm's IS functions will have a greater impact on the market values of financial service firms than on the market values of other firms	**Outsourcer:** Empirical evidence supports inverse relation than hypothesized. Inverse relation is supported at 10 percent level in the regression (multivariate) analysis. Sub-sample analysis supports the inverse finding (-0,87% vs. 1,12% mean cumulative excess return for financial institutions and other firms sub-samples respectively).
H6	**Outsourcer:** The announcement to contract all or portion of a firm's manufacturing functions will have a better impact on the market value compared to the announcement to contract all or	**Outsourcer:** No support is found either in regression (multivariate) or sub-sample (univariate) analysis.

	portion of a firm's IS function	
H7	**Outsourcer:** The market's reaction to IS or manufacturing outsourcing announcements will be inversely related to the size of the contract **Contractor:** The market's reaction to IS or manufacturing outsourcing announcements will be positively related to the size of the contract	**Outsourcer:** No support is found. Empirical evidence suggests positive relation contrary to what is hypothesized. Solid empirical support is not found as positive relation is supported only at 10 percent level in some regression models. **Contractor:** Positive relation between deal size and market reaction is strongly supported at 1 percent level in the regression (multivariate) analysis.
H8	**Outsourcer:** The market's reaction to IS or manufacturing outsourcing announcements will be inversely related to the proposed duration of the contract **Contractor:** The market's reaction to IS or manufacturing outsourcing announcements will be positively related to the proposed duration of the contract	**Outsourcer:** No support is found. Empirical evidence suggests positive relation contrary to what is hypothesized. Solid empirical support is not found as positive relation is supported at 10 percent level only in some regression models. **Contractor:** No support is found as regression analysis indicates statistically insignificant positive relation.
H9	**Outsourcer:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions will have better impact on the market value of a firm that has performed strongly in the capital markets compared to a firm with poor performance **Contractor:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions will have better impact on the market value of a contractor that has performed strongly in the capital markets compared to a contractor with poor performance	**Outsourcer:** No support is found as regression analysis indicates statistically insignificant positive relation. **Contractor:** No support is found. Empirical evidence suggests negative relation contrary to what is hypothesized. Solid empirical support is not found as negative relation is supported at 10 percent level only in some regression models.
H10	**Outsourcer:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions will have a better impact on the market values of firms that have high agency costs compared to firms with low agency costs	**Outsourcer:** No support is found as regression analysis indicates statistically insignificant relations for all variables used as proxy for agency costs
H11	**Outsourcer:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions driven by long-term cost reduction objective will have better impact on the market value of the firm than announcement driven by revenue side objectives **Contractor:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions driven by long-term cost reduction objective will have worse impact on the market value of the contractor than announcement driven by revenue side objectives	**Outsourcer:** No support is found as regression analysis indicates statistically insignificant negative relation contrary to what is hypothesized. **Contractor:** No support is found as regression analysis indicates statistically insignificant positive relation contrary to what is hypothesized.
H12	Outsourcer: The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions driven by transformational objective will have better impact on the market value of the firm than	**Outsourcer:** No support is found as regression analysis indicates statistically insignificant negative relation contrary to what is hypothesized.

	announcement driven by non-transformational objectives	
H13	**Outsourcer:** The initial announcement to contract all or portion of a firm's IS or manufacturing functions will have a greater impact on the market value of the firm compared to the multiple announcements **Contractor:** The initial announcement to contract all or portion of a firm's IS or manufacturing functions will have a greater impact on the market value of the firm compared to the multiple announcements	**Outsourcer:** No support is found as regression analysis indicates statistically insignificant negative relation contrary to what is hypothesized. **Contractor:** No support is found as regression analysis indicates statistically insignificant negative relation contrary to what is hypothesized.
H14	**Outsourcer:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions will have a better impact on the market value of firm's with high uncertainty	**Outsourcer:** Solid support is not found. Positive relation between outsourcer risk and market reaction is supported at 1 or 10 percent level in some regression models, whereas in other models the relation is insignificant.
H15	**Outsourcer:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions will have a better impact on the market values of firms with high growth opportunities compared to firms with low growth opportunities.	**Outsourcer:** No support is found as regression analysis indicates statistically insignificant negative relation contrary to what is hypothesized.
H16	**Outsourcer:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions in an alliance will have a better impact on the market value of firm compared to announcements with other outsourcing structures **Contractor:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions in an alliance will have a better impact on the market value of the contractor compared to announcements with other outsourcing structures	**Outsourcer:** No support is found as regression analysis indicates statistically insignificant positive relation. **Contractor:** Positive relation between alliance structure and market reaction is supported at 10 percent level in the regression (multivariate) analysis. Sub-sample analysis supports this finding (5,38% vs. 1,19% mean cumulative excess return for alliance and other structure sub-samples respectively).
H17	**Outsourcer:** The announcement of a contract to outsource all or portion of a firm's IS or manufacturing functions will have a better impact on the market value of firm when the contractor has a track record **Contractor:** The announcement of a contract to outsource all or portion of a firm's IT or manufacturing functions will have a better impact on the market value of the contractor when the contractor has a track record	**Outsourcer:** No empirical support is found. **Contractor:** No empirical support is found.

6.2. Directions for future research

The area of outsourcing and its market reaction has several alternative avenues for further research. As outsourcing has for the past decade been a growing phenomena and is becoming a standard management tool for many companies the amount of large deals to be studied is significant, enabling larger sample sizes than used in previous studies. In parallel, however, the signalling value of outsourcing may also have declined as so many companies have already outsourced large parts of their IT and manufacturing. During this process I have identified three areas that can possibly allow for additional academic enquiry. The following three paragraphs briefly present these ideas.

The first potential area for further empirical examination is related to the new findings from this study, i.e. the positive correlation between outsourcer's profitability and market reaction, negative correlation between financial institutions and market reaction and positive correlation with alliance type contracts and contractor. Firstly, it would be valuable to test the consistency of these findings as they have not been tested and reported in earlier studies. The positive correlation between outsourcers profitability and market reaction suggests that market are able to distinguish the different motives for outsourcing and reward announcements where companies are not pressured to outsource, e.g. due to financial weakness. However, there are other possible explanations for this relationship and it would be interesting to test this by using other proxies for the different motives of outsourcing. Similarly, there are several alternative explanations for the negative reaction of announcements by financial institutions that would also warrant further research. Finally, the positive reaction of contractors to alliance based announcements should be more carefully studied to reveal the underlying reason for the somewhat surprising positive reaction only for the contractor. Testing this is, however, fairly challenging as it would require detailed knowledge of the terms and conditions in these alliance structures and significantly larger sample size of alliance based contract, both of which are difficult to obtain.

An alternative area that could prove to be an interesting topic for further research would be to study the characteristics of the companies that outsource as well as their long term performance. Particularly, it could be interesting to test if the outsourcers are overall more

focus increasing, e.g. via divestment of non-core assets, than their less outsourced counterparts. This type of study is, however, fairly challenging to conduct as it would require considerable time to individually examine and categorize the companies for a robust empirical study. Both of these topics have been earlier studied only in a few papers with relatively small sample size. The last link between outsourcing activity and overall focus increase has not been studied before.

The final area that could be an interesting topic for further study is the market reaction of the combined entity and possible interactions between the explanatory variables. It could be interesting to test the market reaction of the combined entity as a function of all the explanatory variables due to the fact that some variables are likely to have a value impact on the combined entity, whereas, other variables have an impact on the distribution of the benefits between the outsourcer and contractor. Additionally, there has been only limited attention to the possibility of interaction between the explanatory variables to jointly alter investors' perceptions in relation to outsourcing announcements in this or other studies, which could also be an interesting topic to be studied further.

Appendix 1. Sample

This Appendix shows the sample by listing outsourcer's name, announcement date, contractor's name, deal size (in million $), deal length (in years) and annual deal size (in million $ per year) for the 316 outsourcing announcements.

Number	Outsourcer Name	Date	Contractor Name	Deal Size (M$)	Deal Length (years)	Annual Deal Size (M$)
1	DuPont	11.12.1996	CSC	4 000	10	400
2	Ericsson	12.2.1997	Flextronics	900	4	225
3	Ericsson	24.3.1997	Solectron			
4	HP	8.4.1997	Celestica	800	4	200
5	DuPont	2.6.1997	CSC	4 000	10	400
6	HP	16.6.1997	Celestica	500	4	125
7	Sage Life	19.6.1997	EDS	88	10	9
8	Ericsson	8.7.1997	Solectron			
9	HP	5.8.1997	Celestica	800	4	200
10	BellSouth	7.8.1997	EDS	4 000	10	400
11	Commonwealth Bank	13.8.1997	EDS	3 700	10	370
12	HP	2.9.1997	Celestica	500	4	125
13	NCR	19.12.1997	Solectron	1 200	5	240
14	Chevron	22.12.1997	EDS	450	5	90
15	Unisys	6.1.1998	HP			
16	Madge Networks	23.2.1998	Celestica			
17	GE	4.3.1998	IBM		10	-
18	Unisys	26.3.1998	HP	500	3	167
19	Banca di Roma	22.4.1998	EDS	1 500	10	150
20	Kone	25.4.1998	Elcoteq	300	3	100
21	NCR	27.4.1998	Solectron	1 200	5	240
22	HP	11.5.1998	Jabil Circuit	600	4	150
23	HP	28.5.1998	Celestica			
24	Chiron Corporation	17.6.1998	IBM	139	10	14
25	Chevron	18.6.1998	EDS	400	5	80
26	Silicon Graphics	2.7.1998	Celestica			
27	British Airways	28.7.1998	EDS	165	10	17
28	Mitsubishi Electric Corporation	29.7.1998	Solectron	350	5	70
29	Hitachi	31.8.1998	Celestica			
30	Cable & Wireless communication	2.9.1998	IBM	3 000	10	300
31	Kone	18.9.1998	Elcoteq	300	3	100
32	The Boeing company	30.9.1998	IBM	2 000	5	400
33	Banc One	30.9.1998	AT&T	2 000	6	333
34	Nortel	6.10.1998	Jabil Circuit			
35	Consolidated Freightways	3.11.1998	IBM	110	5	22
36	Korean Air	21.12.1998	IBM	120	10	12
37	IBM	6.1.1999	Solectron			
38	AT&T	28.1.1999	CSC	300	10	30
39	IBM	1.2.1999	Solectron			
40	MCI Worldcom	11.2.1999	EDS	6 400	10	640
41	Budget	22.3.1999	CSC	200	5	40
42	Cabletron systems	22.3.1999	Celestica	800	4	200
43	HP	30.3.1999	Celestica			
44	McDermott International	31.3.1999	AT&T	600	10	60
45	Nissan	12.4.1999	IBM			
46	Trimble	13.4.1999	Solectron	250	3	83
47	Ericsson	19.4.1999	Flextronics	900	4	225
48	Glenayre Technologies	21.4.1999	Solectron	350	5	70
49	United Technologies	12.5.1999	CSC	1 200	10	120
50	United Technologies	12.5.1999	CSC	1 200	10	120
51	BCE Mobile Communications	19.5.1999	CGI	450	10	45
52	Ericsson	30.6.1999	Flextronics	900	4	225
53	Galeries Lafayette	7.7.1999	IBM	1 200	15	80
54	ACE INA	7.7.1999	IBM	500	10	50
55	Equifax	14.7.1999	EDS	200	10	20
56	Telecom New Zealand	15.7.1999	EDS	1 500	10	150
57	Nortel	4.8.1999	Sanmina	600	4	150
58	Trimble	11.8.1999	Solectron	250	3	83
59	IBM	17.8.1999	Solectron			
60	Mitsui Marine	24.8.1999	IBM	235	10	24
61	IBM	30.9.1999	Solectron			
62	Nortel	1.10.1999	Sanmina			
63	Mazda	7.10.1999	IBM	480	10	48
64	United Technologies	25.10.1999	CSC	900	10	90
65	MCI Worldcom	25.10.1999	EDS	6 400	5	1 280
66	MCI Worldcom	25.10.1999	EDS	6 400	10	640
67	Nissan	28.10.1999	IBM	1 000	10	105
68	Ericsson	1.11.1999	Solectron	1 150	4	288
69	Nortel	3.11.1999	Sanmina			
70	Ericsson	19.11.1999	Flextronics	900	4	225
71	Siemens	29.11.1999	Flextronics	650	4	163
72	Fujitsu	29.11.1999	Flextronics	650	4	163
73	United Technologies	5.1.2000	CSC	507	10	51
74	Alcatel	5.1.2000	Sanmina			
75	Alcatel	5.1.2000	Solectron	500	3	167
76	Harris Corporation	10.1.2000	Sanmina			
77	Harris Corporation	11.1.2000	Sanmina			
78	IBM	12.1.2000	Celestica	3 000	4	750
79	Cabletron systems	19.1.2000	Flextronics	1 000	4	250
80	IBM	29.2.2000	Celestica			
81	Harris Corporation	1.3.2000	Sanmina			
82	Ericsson	1.3.2000	Solectron	1 150	4	288
83	Harris Corporation	3.3.2000	Sanmina			
84	Siemens	27.3.2000	Flextronics	1 000	3	333
85	Alcatel	3.4.2000	Solectron	380	4	95
86	AT&T	4.4.2000	CSC	1 000	7	143
87	Nortel	4.4.2000	Solectron	10 400	4	2 600
88	Nortel	4.4.2000	Solectron			
89	Sumitomo Metal industries	13.4.2000	IBM	660	10	66

90	Saab AB	14.4.2000	CSC	300	5	60
91	Microsoft	19.4.2000	Flextronics			
92	Aventis	16.5.2000	IBM	1 500	10	150
93	AXA Group	25.5.2000	IBM	400	10	40
94	Motorola	31.5.2000	Flextronics	30 000	5	6 000
95	IBM	31.5.2000	Solectron	220	4	55
96	IBM	31.5.2000	Celestica			
97	Nortel	5.6.2000	Solectron			
98	IBM	20.6.2000	Solectron	220	4	55
99	NEC	23.6.2000	Celestica	1 200	5	240
100	NEC	30.6.2000	Celestica			
101	Nortel	2.7.2000	Solectron	1 000	4	250
102	CIBC	24.7.2000	HP			
103	Nortel	2.8.2000	CSC	3 000	7	429
104	Siemens	3.8.2000	Flextronics			
105	Solectron	10.8.2000	IBM	1 800	10	180
106	BP	11.8.2000	IBM	200	5	40
107	J Sainsbury	22.8.2000	Accenture			
108	Lucent	31.8.2000	Sanmina	150	4	38
109	Lucent	2.10.2000	Sanmina			
110	Marconi	5.10.2000	Jabil Circuit			
111	Ericsson	9.10.2000	Flextronics	300	4	75
112	Westpac Banking	12.10.2000	IBM	2 300	10	230
113	Siemens	18.10.2000	Sanmina-SCI	350	4	88
114	Sony	18.10.2000	Solectron	2 050	4	513
115	Nippon Telegraph and Telephone	31.10.2000	IBM	15 000	10	1 500
116	Oxford Health Plans	13.11.2000	CSC	300	5	60
117	Oxford Health Plans	21.11.2000	CSC	300	5	60
118	Motorola	6.12.2000	Celestica			
119	J Sainsbury	8.12.2000	Accenture	2 550	7	364
120	Sare Lee	19.12.2000	HP	150	5	30
121	Sun Life Financial	4.1.2001	CGI	90	7	13
122	Marconi	11.1.2001	Jabil Circuit	4 000	3	1 333
123	Rautaruukki	15.1.2001	TietoEnator	150	5	30
124	Ericsson	26.1.2001	Flextronics	4 000	4	1 000
125	AstraZeneca	1.2.2001	IBM	1 700	7	243
126	Sony	2.2.2001	Solectron	750	4	188
127	Ceragon	13.2.2001	Flextronics			
128	Avaya	21.2.2001	Celestica	4 000	5	800
129	Rautaruukki	27.2.2001	TietoEnator	150	5	30
130	Franklin Resources	28.2.2001	IBM	480	10	48
131	Sabre Holding	15.3.2001	EDS	2 200	10	220
132	Sampo	21.3.2001	TietoEnator	10	4	3
133	Scotiabank	26.3.2001	IBM	578	7	83
134	Kesko	30.3.2001	TietoEnator	235	5	47
135	Alcatel	26.4.2001	Flextronics	850	4	213
136	Avaya	7.5.2001	Celestica	4 000	5	800
137	Fiat	21.5.2001	IBM	6 200	10	620
138	NTL	24.5.2001	IBM	2 000	5	400
139	Cisco	29.5.2001	Solectron			
140	SAGEM SA	31.5.2001	Celestica	500	3	167
141	Schroders	4.6.2001	CSC	240	7	34
142	Marconi	15.6.2001	Jabil Circuit			
143	3Com	19.6.2001	Flextronics			
144	Japan Airlines	21.6.2001	IBM	664	10	66
145	Alcatel	25.6.2001	Sanmina-SCI	450	4	113
146	Alcatel	27.6.2001	Sanmina-SCI			
147	Alcatel	2.7.2001	Flextronics	850	4	213
148	Air Canada	20.7.2001	IBM	908	7	130
149	Lucent	24.7.2001	Celestica	10 000	5	2 000
150	Alcatel	27.8.2001	Sanmina-SCI	450	4	113
151	Allianz	28.8.2001	CGI	380	10	38
152	Pitney Bowes	27.9.2001	CGI	25	5	5
153	HP	27.9.2001	Flextronics	250	4	63
154	Xerox	2.10.2001	Flextronics	5 000	5	1 000
155	Sampo	3.10.2001	TietoEnator	300	3	100
156	Sierra Wireless	11.10.2001	Solectron			
157	ARRIS	23.10.2001	Solectron			
158	NEC	23.10.2001	Solectron	500	4	125
159	United Technologies	19.11.2001	CSC	1 100	5	220
160	Xerox	28.11.2001				
161	Cendant	3.12.2001	IBM	1 400	10	140
162	Sony	12.12.2001	Solectron	1 145	4	286
163	Xerox	21.12.2001	Flextronics	3 000	5	600
164	PacifiCare Health Systems	3.1.2002	IBM	1 200	10	120
165	IBM	8.1.2002	Sanmina-SCI	5 000	3	1 667
166	NEC	8.1.2002	Celestica	2 500	5	500
167	Gulfstream Aerospace	9.1.2002	CSC	510	10	51
168	HP	17.1.2002	Sanmina-SCI			
169	PacifiCare Health Systems	22.1.2002	IBM	1 200	10	120
170	Nextel Communications	23.1.2002	EDS	234	5	47
171	Alcatel	24.1.2002	Sanmina-SCI	1 500	4	375
172	Allmerica Financial	28.1.2002	Keane	150	7	21
173	Lucent	31.1.2002	Solectron			
174	Ericsson	20.2.2002	Flextronics			
175	American Express	25.2.2002	IBM	4 000	7	571
176	Aspect Communications	25.2.2002	Solectron			
177	Compaq	27.2.2002	Jabil Circuit	240	3	80
178	Pace Micro Technology	5.3.2002	Solectron			
179	Ciena	6.3.2002	Sanmina-SCI			
180	Alcatel	7.3.2002	Jabil Circuit	700	3	233

181	Invensys	22.3.2002	IBM	1 000	10	100
182	Invensys	25.3.2002	IBM			
183	Valeo	25.3.2002	Jabil Circuit	900	3	300
184	Lucent	28.3.2002	Solectron	2 000	3	667
185	Altamar Networks	9.4.2002	Sanmina-SCI			
186	Ditech Communications	9.4.2002	Sanmina			
187	Deutsche Bank	24.4.2002				
188	Siemens	25.4.2002	Sanmina			
189	Iomega Corporation	2.5.2002	Venture Corporaton	200	5	40
190	Casio	14.5.2002	Flextronics	1 500	3	500
191	Agilent Technologies	15.5.2002	Venture Corporaton			
192	Alcatel	23.5.2002	Sanmina-SCI			
193	Lucent	31.5.2002	Solectron	2 000	3	667
194	Storage Technology	13.6.2002	Sanmina			
195	Procter & Gamble	14.6.2002				
196	Boots Company	19.6.2002				
197	Deutsche Bank	26.6.2002				
198	Elisa	26.6.2002	Flextronics			
199	Dot Hill Systems	26.6.2002	Solectron			
200	Finnair	27.6.2002	IBM	400	10	40
201	NICE Systems	1.7.2002	Flextronics			
202	Alcatel	1.7.2002	Sanmina-SCI			
203	Lifestream	15.7.2002	Sanmina			
204	Alcan	30.7.2002	CGI	130	10	13
205	BNSF	14.8.2002	IBM	200	10	20
206	ABN AMRO Holding	20.8.2002	EDS	1 500	5	300
207	Royal Philips Electronics	28.8.2002	Jabil Circuit	4 000	4	1 000
208	Casio	2.9.2002	Flextronics	2 000	4	500
209	Asyst Technologies	5.9.2002	Solectron	1 000	5	200
210	CIBC	17.9.2002	HP	1 500	7	214
211	Deutsche Bank	24.9.2002	IBM			
212	Iomega Corporation	30.9.2002	Venture Corporaton	200	5	40
213	Boots Company	1.10.2002	IBM	1 100	10	110
214	NMS Communications	8.10.2002	Plexus			
215	Palm	28.10.2002	Celestica			
216	J.P.Morgan Chase	4.11.2002				
217	Bombardier	4.11.2002	CSC	670	7	96
218	Air Liquide	5.11.2002	CGI	116	10	12
219	J.P.Morgan Chase	13.11.2002	IBM	5 000	7	714
220	Royal Philips Electronics	18.11.2002	Jabil Circuit			
221	Alstom	20.11.2002	EDS	2 000	5	400
222	Bombardier	21.11.2002	CSC	700	7	100
223	United Technologies	25.11.2002	CSC	143	5	29
224	Bank of America	12.12.2002	EDS	4 500	10	450
225	Deutsche Bank	18.12.2002	IBM	2 500	10	250
226	ABN AMRO Holding	24.12.2002	EDS	1 300	5	260
227	J.P.Morgan Chase	30.12.2002	IBM	5 000	7	714
228	IBM	7.1.2003	Sanmina-SCI	3 600	3	1 200
229	SBC Communications	10.1.2003	Amdocs	500	7	71
230	HP	3.2.2003	Solectron	1 400	5	280
231	Visteon	12.2.2003	IBM	2 000	10	200
232	Telecom Italia	21.2.2003	HP	244	5	49
233	Intuitive Surgical	27.2.2003	Solectron			
234	AXA Group	28.2.2003	IBM	1 000	6	167
235	NEC	28.2.2003	Jabil Circuit	250	4	63
236	Agilent Technologies	15.3.2003	Venture Corporaton	150	4	38
237	Motorola	27.3.2003	CSC	1 600	10	160
238	Bank of Ireland	7.4.2003	HP	500	5	100
239	Ericsson	11.4.2003	HP			
240	Procter & Gamble	11.4.2003	HP	3 000	10	300
241	Bank of Ireland	14.4.2003	HP	600	7	86
242	John Hancock Financial Services	23.4.2003	IBM	254		
243	Procter & Gamble	6.5.2003	HP	3 000	10	300
244	Marconi	27.5.2003	CSC	735	10	74
245	ISS	29.5.2003	CSC	450	10	45
246	Electrolux	1.6.2003	IBM	250	7	36
247	Ericsson	4.6.2003	HP	1 000	5	200
248	M-real	11.6.2003	IBM	646	10	65
249	Ericsson	24.6.2003	IBM	1 000	5	200
250	TeliaSonera	25.6.2003	TietoEnator	72	3	24
251	Bombardier	14.7.2003	CGI	150	7	21
252	ABB	28.7.2003	IBM	1 100	10	110
253	NEC	30.7.2003	Solectron			
254	Tellabs	1.8.2003	Sanmina-SCI			
255	Equifax	7.8.2003	IBM	500	5	100
256	DaimlerChrysler	12.8.2003	Deutsche Telekom	1 400	5	280
257	John Hancock Financial Services	5.9.2003	IBM	254	6	42
258	York International	8.9.2003	EDS	426	10	43
259	3Com	10.9.2003	Flextronics	1 000	3	333
260	3Com	10.9.2003	Flextronics	1 000	4	250
261	Nortel	30.9.2003	Solectron		5	-
262	Nordea	1.10.2003	IBM	2 500	10	250
263	Advanced Digital Information Corporation	6.10.2003	Benchmark Electronics	150	4	38
264	TD Bank Financial	16.10.2003	IBM	543	7	78
265	Elizabeth Arden	31.10.2003	IBM			
266	Korean Air	3.11.2003	IBM	120	10	12
267	Tellabs	14.11.2003	Elcoteq	200	4	50
268	Advanced Digital Information Corporation	24.11.2003	Benchmark Electronics	150	4	38
269	Bank of Ireland	28.11.2003	HP	600	7	86
270	Commerzbank	29.11.2003	IBM	500	5	100

271	Canadian Pacific Railway	2.12.2003	IBM	154	7	22
272	Alcan	3.12.2003	CGI Group	113	10	11
273	Zurich Financial Services	10.12.2003	IBM	450	5	90
274	Michelin	11.12.2003	IBM	1 200	8	150
275	ING U.S. Financial Services	16.12.2003	IBM	600	7	86
276	SAS	18.12.2003	CSC	1 400	5	280
277	BNP Paribas	19.12.2003	IBM	1 200	5	240
278	Sears, Roebuck and Co.	16.1.2004				
279	Nokia	16.1.2004	IBM	251	5	50
280	Nortel	22.1.2004	Flextronics	8 000	4	2 000
281	Nortel	22.1.2004	Flextronics	10 000	4	2 500
282	Delta Lloyd	16.2.2004	IBM	255	7	36
283	Sears, Roebuck and Co.	11.3.2004	CSC	2 000	10	200
284	Bharti Tele-Ventures	26.3.2004	IBM	750	10	75
285	McDonalds	31.3.2004	Affiliated Computer Services	219	7	31
286	Best Buy	5.4.2004				
287	DSV group	19.4.2004	Accenture	100	5	20
288	Shell	3.5.2004	IBM	1 000	5	200
289	HP	4.5.2004	BT	750	7	107
290	BT	4.5.2004	HP	750	7	107
291	Qantas	17.5.2004	IBM	446	10	45
292	AMP limited	17.5.2004	CSC	103	5	21
293	TXU	18.5.2004	Capgemini	3 500	10	350
294	Cox Insurance Holdings	20.5.2004	CGI	246	10	25
295	Sears, Roebuck and Co.	1.6.2004	CSC	1 600	10	160
296	Zurich Financial Services	7.6.2004	CSC			
297	Wärtsilä	23.6.2004	HP	100	10	10
298	Barclays	23.6.2004	Accenture	400	6	67
299	Cott Corporation	23.6.2004	CGI	155	10	16
300	Nortel	29.6.2004	Flextronics	10 000	4	2 500
301	Nortel	29.6.2004	Flextronics	10 000	4	2 500
302	Sprint	8.7.2004	IBM	400	5	80
303	Standard register	14.7.2004	HP	53	5	11
304	TD Bank Financial	14.7.2004	HP	320	7	46
305	Best Buy	15.7.2004	Accenture	600	7	86
306	AON	22.7.2004	CSC	600	7	86
307	Zurich Financial Services	26.7.2004	CSC	1 300	7	186
308	The Phoenix companies	29.7.2004	EDS	122	7	17
309	Bank of America	13.8.2004	EDS	1 100	9	129
310	Fortum	23.8.2004	HP	100	5	20
311	RIM	9.9.2004	Elcoteq			
312	Dun & Bradstreet	20.10.2004	IBM	180	7	26
313	Singaporean airlines	26.10.2004	IBM	300	7	43
314	Agilent Technologies	27.10.2004	Flextronics			
315	Textron	28.10.2004	CSC	1 100	10	110
316	SAS	12.11.2004	CSC	63	8	8

Appendix 2. Correlation between the variables

This Appendix reports the correlation between the explanatory variables used in this study by presenting Pearson correlation and statistical significance (using two-tailed test) for each variable pair.

		DEAL LENGTH	DEAL SIZE	ALLIANCE	MANU-FACTURING	FINANCIAL INSTITUTIO N	INITIAL ANNOUN-CEMENT	PRE ANNOUN-CEMENT	POST ANNOUN-CEMENT	TRANSFOR-MATIONAL ROLE	COST FOCUS	CONTRACTOR EXPERIENCE	OUTSOURCER REVENUE	CASH	MARKET TO BOOK	DEBT	OUTSOURCER NET INCOME	CONTRACTOR REVENUE	OUTSOURCER STOCK PERFOR-MANCE	STOCK RETURN VOLATILITY
DEAL LENGTH	Pearson Correlation	1,000	-0,201	0,139	-0,710	0,145	0,211	-0,022	-0,238	0,158	0,066	0,128	-0,162	-0,180	-0,034	0,241	0,149	0,441	0,036	-0,221
	Sig. (2-tailed)	.	0,003	0,042	0,000	0,035	0,007	0,754	0,000	0,021	0,334	0,063	0,018	0,007	0,622	0,000	0,030	0,000	0,599	0,001
DEAL SIZE	Pearson Correlation	-0,201	1,000	0,198	0,321	-0,085	-0,092	0,072	-0,010	0,135	0,039	0,113	0,122	0,021	0,040	-0,011	-0,182	-0,140	0,033	0,184
	Sig. (2-tailed)	0,003	.	0,004	0,000	0,219	0,181	0,297	0,885	0,050	0,568	0,099	0,076	0,766	0,662	0,871	0,007	0,041	0,636	0,002
ALLIANCE	Pearson Correlation	0,139	0,198	1,000	-0,083	-0,044	0,121	-0,075	-0,069	0,166	-0,069	-0,068	0,152	-0,097	-0,019	0,122	0,053	0,116	0,025	-0,083
	Sig. (2-tailed)	0,042	0,004	.	0,227	0,525	0,079	0,275	0,318	0,011	0,318	0,321	0,026	0,206	0,781	0,075	0,440	0,092	0,715	0,226
MANUFACTURING	Pearson Correlation	-0,710	0,321	-0,083	1,000	-0,321	-0,245	-0,136	0,363	-0,074	-0,072	-0,071	0,104	0,210	0,048	-0,239	-0,233	-0,526	-0,046	0,327
	Sig. (2-tailed)	0,000	0,000	0,227	.	0,000	0,000	0,047	0,000	0,282	0,295	0,302	0,129	0,002	0,483	0,000	0,001	0,000	0,506	0,000
FINANCIAL INSTITUTION	Pearson Correlation	0,145	-0,085	-0,044	-0,321	1,000	0,006	0,123	-0,128	-0,012	0,155	0,089	-0,086	-0,205	0,088	-0,082	0,196	0,287	0,071	-0,244
	Sig. (2-tailed)	0,035	0,219	0,525	0,000	.	0,934	0,072	0,061	0,862	0,021	0,193	0,212	0,003	0,203	0,234	0,004	0,000	0,302	0,000
INITIAL ANNOUNCEMENT	Pearson Correlation	0,211	-0,092	0,121	-0,245	0,006	1,000	0,048	-0,589	0,128	-0,017	-0,012	-0,016	-0,191	0,052	0,079	0,098	0,106	0,027	-0,141
	Sig. (2-tailed)	0,003	0,181	0,079	0,000	0,934	.	0,483	0,000	0,062	0,801	0,859	0,814	0,000	0,449	0,250	0,154	0,125	0,694	0,026
PRE ANNOUNCEMENT	Pearson Correlation	-0,022	0,072	-0,075	-0,136	0,123	0,048	1,000	-0,095	-0,074	-0,095	0,099	-0,075	0,130	-0,048	0,089	-0,027	0,017	0,011	0,037
	Sig. (2-tailed)	0,754	0,297	0,275	0,047	0,072	0,483	.	0,168	0,281	0,168	0,149	0,277	0,057	0,489	0,194	0,696	0,806	0,878	0,593
POST ANNOUNCEMENT	Pearson Correlation	-0,238	-0,010	-0,069	0,363	-0,128	-0,589	-0,095	1,000	-0,112	-0,087	0,084	0,046	0,080	0,056	-0,135	-0,071	-0,203	-0,007	0,101
	Sig. (2-tailed)	0,000	0,888	0,318	0,000	0,061	0,000	0,168	.	0,102	0,207	0,223	0,500	0,247	0,416	0,049	0,306	0,003	0,916	0,142
TRANSFORMATIONAL ROLE	Pearson Correlation	0,158	0,135	0,166	-0,074	-0,012	0,128	-0,074	-0,112	1,000	-0,008	0,093	-0,072	-0,009	0,007	0,008	0,047	0,199	0,029	-0,062
	Sig. (2-tailed)	0,021	0,050	0,011	0,282	0,862	0,062	0,281	0,102	.	0,907	0,177	0,295	0,893	0,924	0,909	0,492	0,002	0,679	0,367
COST FOCUS	Pearson Correlation	0,066	0,039	-0,069	-0,072	0,155	-0,017	-0,095	-0,087	-0,008	1,000	0,084	-0,114	0,031	-0,081	0,020	-0,028	0,222	-0,126	0,175
	Sig. (2-tailed)	0,334	0,568	0,318	0,298	0,021	0,801	0,168	0,207	0,907	.	0,223	0,098	0,657	0,237	0,774	0,686	0,001	0,067	0,011
CONTRACTOR EXPERIENCE	Pearson Correlation	0,128	0,113	-0,068	-0,071	0,089	-0,012	0,099	0,084	0,093	0,084	1,000	0,083	-0,046	0,130	0,099	-0,005	0,306	-0,090	0,076
	Sig. (2-tailed)	0,063	0,099	0,321	0,302	0,193	0,859	0,149	0,223	0,177	0,223	.	0,230	0,502	0,059	0,148	0,944	0,000	0,191	0,272
OUTSOURCER REVENUE	Pearson Correlation	-0,162	0,122	0,152	0,104	-0,086	-0,016	-0,075	0,046	-0,072	-0,114	0,083	1,000	-0,177	0,029	-0,022	0,118	-0,042	-0,030	-0,138
	Sig. (2-tailed)	0,018	0,076	0,026	0,129	0,212	0,814	0,277	0,500	0,295	0,098	0,230	.	0,012	0,674	0,751	0,087	0,545	0,664	0,045
CASH	Pearson Correlation	-0,180	0,021	-0,087	0,210	-0,205	-0,191	0,130	0,080	-0,009	0,031	-0,046	-0,177	1,000	0,008	-0,165	-0,152	-0,044	0,111	0,318
	Sig. (2-tailed)	0,007	0,766	0,206	0,002	0,003	0,080	0,057	0,247	0,893	0,657	0,502	0,012	.	0,910	0,018	0,035	0,521	0,107	0,000
MARKET TO BOOK	Pearson Correlation	-0,034	0,040	-0,019	0,048	0,088	0,052	-0,048	0,096	0,007	-0,081	0,130	0,029	0,008	1,000	-0,059	0,175	-0,012	0,067	-0,121
	Sig. (2-tailed)	0,622	0,562	0,781	0,483	0,203	0,449	0,459	0,416	0,924	0,237	0,059	0,674	0,910	.	0,390	0,011	0,860	0,206	0,078
DEBT	Pearson Correlation	0,241	-0,011	0,122	-0,239	-0,082	0,079	0,089	-0,135	0,008	0,020	0,099	-0,022	-0,165	-0,059	1,000	-0,200	0,171	-0,041	0,112
	Sig. (2-tailed)	0,000	0,871	0,075	0,000	0,234	0,250	0,194	0,040	0,909	0,774	0,148	0,751	0,018	0,390	.	0,003	0,013	0,554	0,103
OUTSOURCER NET INCOME	Pearson Correlation	0,149	-0,182	0,053	-0,233	0,196	0,098	-0,027	-0,071	0,047	-0,028	-0,005	0,118	-0,152	0,175	-0,200	1,000	0,141	0,131	-0,502
	Sig. (2-tailed)	0,030	0,008	0,440	0,001	0,004	0,154	0,696	0,306	0,492	0,689	0,944	0,087	0,029	0,011	0,003	.	0,040	0,057	0,000
CONTRACTOR REVENUE	Pearson Correlation	0,441	-0,140	0,116	-0,526	0,287	0,108	0,017	-0,203	0,199	0,222	0,306	-0,042	-0,044	-0,012	0,171	0,141	1,000	-0,006	-0,121
	Sig. (2-tailed)	0,000	0,041	0,092	0,000	0,000	0,125	0,806	0,002	0,003	0,001	0,000	0,545	0,521	0,860	0,013	0,040	.	0,933	0,077
OUTSOURCER STOCK PERFORMANCE	Pearson Correlation	0,036	0,033	0,025	-0,046	0,071	0,027	0,011	-0,007	0,039	-0,126	-0,090	-0,030	0,111	0,087	-0,041	0,131	-0,006	1,000	-0,198
	Sig. (2-tailed)	0,599	0,636	0,715	0,506	0,302	0,694	0,878	0,916	0,679	0,067	0,191	0,664	0,107	0,206	0,554	0,057	0,933	.	0,004
STOCK RETURN VOLATILITY	Pearson Correlation	-0,221	0,184	-0,083	0,327	-0,244	-0,141	0,037	0,101	-0,062	0,175	0,076	-0,138	0,318	-0,121	0,112	-0,552	-0,121	-0,198	1,000
	Sig. (2-tailed)	0,001	0,007	0,226	0,000	0,000	0,046	0,593	0,142	0,367	0,011	0,272	0,045	0,000	0,078	0,103	0,000	0,077	0,004	.

Appendix 3. Sub-sample results

This appendix reports mean cumulative excess returns (MCER) of outsourcers and contractors for different sub-samples. Sub-samples are based on two different samples: full sample with 316 (outsourcers) and 305 (contractors) outsourcing announcements and reduced sample with 223 (outsourcer) and 222 (contractor) outsourcing announcements. Mean cumulative excess returns are calculated using market risk adjusted excess returns (MRAR). Mean cumulative excess return (MCER), t-test value (t-test) and statistical significance (p-value) are reported for 8 different sub-samples and 7 different event windows. *,**,*** denote statistical significance at 10%, 5% and 1% level respectively using two-tailed tests.

	Full sample						Reduced sample					
	Outsourcer's mean cumulative excess return			Contractor's mean cumulative excess return			Outsourcer's mean cumulative excess return			Contractor's mean cumulative excess return		
Smaller sized outsourcing firms	MCER	t-test	p-value	MCER	t-test	p-value	MCER	t-test	p-value	MCER	t-test	p-value
Announcement day												
[0]	0,59 %	1,34	0,181	1,39 %	3,63	0,000***	0,55 %	1,40	0,164	1,71 %	3,68	0,000***
Up to the announcement												
[-1,0]	0,47 %	0,75	0,453	1,09 %	2,01	0,046**	0,34 %	0,61	0,543	1,82 %	2,78	0,006***
[-2,0]	0,47 %	0,61	0,544	1,64 %	2,48	0,014**	0,00 %	0,00	0,996	2,09 %	2,61	0,001***
[-20,0]	0,11 %	0,06	0,955	-0,74 %	-0,42	0,673	0,26 %	0,14	0,885	1,45 %	0,68	0,495
After the announcement												
[0,1]	1,17 %	1,87	0,064*	1,52 %	2,81	0,006***	0,31 %	0,56	0,576	1,76 %	2,68	0,008***
[0,2]	1,50 %	1,96	0,052*	2,56 %	3,87	0,000***	0,22 %	0,32	0,746	3,09 %	3,85	0,000***
[0,20]	3,00 %	1,48	0,141	0,91 %	0,52	0,604	0,41 %	0,23	0,819	0,97 %	0,46	0,648
Larger sized outsourcing firms												
Announcement day												
[0]	-0,10 %	-0,58	0,566	0,50 %	2,57	0,011**	-0,10 %	-0,51	0,614	0,69 %	3,24	0,001***
Up to the announcement												
[-1,0]	-0,07 %	-0,28	0,780	0,42 %	1,53	0,129	0,03 %	0,11	0,914	0,68 %	2,26	0,025**
[-2,0]	-0,09 %	-0,32	0,750	0,49 %	1,44	0,151	0,06 %	0,17	0,867	0,68 %	1,83	0,068*
[-20,0]	0,91 %	1,19	0,235	0,65 %	0,73	0,468	1,37 %	1,56	0,121	1,89 %	1,94	0,054*
After the announcement												
[0,1]	-0,11 %	-0,49	0,625	0,90 %	3,25	0,001***	-0,10 %	-0,36	0,721	1,25 %	4,15	0,000***
[0,2]	0,12 %	0,41	0,685	0,95 %	2,82	0,005***	0,23 %	0,68	0,497	1,21 %	3,28	0,001***
[0,20]	-1,58 %	-2,08	0,039**	-0,52 %	-0,58	0,560	-1,69 %	-1,93	0,056*	-0,12 %	-0,12	0,903
	Outsourcer's mean cumulative excess return			Contractor's mean cumulative excess return			Outsourcer's mean cumulative excess return			Contractor's mean cumulative excess return		
Electronic manufacturing outsourcing	MCER	t-test	p-value	MCER	t-test	p-value	MCER	t-test	p-value	MCER	t-test	p-value
Announcement day												
[0]	0,04 %	0,14	0,891	1,24 %	3,76	0,000***	-0,02 %	-0,06	0,950	1,90 %	4,06	0,000***
Up to the announcement												
[-1,0]	-0,06 %	-0,14	0,889	0,68 %	1,46	0,146	-0,06 %	-0,13	0,894	1,50 %	2,26	0,025**
[-2,0]	-0,01 %	-0,02	0,987	1,11 %	1,95	0,053*	0,07 %	0,11	0,910	1,55 %	1,91	0,057*
[-20,0]	0,06 %	0,05	0,962	-1,42 %	-0,93	0,351	1,50 %	0,96	0,340	1,67 %	0,78	0,436
After the announcement												
[0,1]	0,20 %	0,50	0,621	1,65 %	3,53	0,001***	-0,25 %	-0,51	0,611	2,70 %	4,08	0,000***
[0,2]	0,38 %	0,76	0,450	2,19 %	3,83	0,000***	-0,21 %	-0,35	0,728	3,04 %	3,75	0,000***
[0,20]	-0,58 %	-0,44	0,664	-2,12 %	-1,40	0,163	-2,44 %	-1,55	0,122	-2,65 %	-1,24	0,218
Information technology outsourcing												
Announcement day												
[0]	0,08 %	0,43	0,671	0,34 %	1,75	0,081*	0,04 %	0,21	0,833	0,44 %	2,24	0,027**
Up to the announcement												
[-1,0]	0,15 %	0,56	0,574	0,54 %	1,93	0,056*	0,18 %	0,63	0,530	0,67 %	2,36	0,019**
[-2,0]	0,07 %	0,22	0,827	0,55 %	1,61	0,110	0,03 %	0,08	0,933	0,72 %	2,10	0,037**
[-20,0]	1,27 %	1,44	0,151	1,60 %	1,78	0,077*	1,10 %	1,18	0,238	1,85 %	2,03	0,044**
After the announcement												
[0,1]	0,16 %	0,59	0,557	0,61 %	2,18	0,031**	0,08 %	0,29	0,771	0,72 %	2,57	0,011**
[0,2]	0,48 %	1,44	0,152	0,75 %	2,21	0,029**	0,43 %	1,22	0,224	0,95 %	2,76	0,006***
[0,20]	-0,48 %	-0,55	0,586	1,42 %	1,57	0,118	-0,71 %	-0,77	0,443	1,45 %	1,59	0,113
	Outsourcer's mean cumulative excess return			Contractor's mean cumulative excess return			Outsourcer's mean cumulative excess return			Contractor's mean cumulative excess return		
Financial institutions (IT outsourcing)	MCER	t-test	p-value	MCER	t-test	p-value	MCER	t-test	p-value	MCER	t-test	p-value
Announcement day												
[0]	-0,22 %	-0,89	0,373	-0,10 %	-0,28	0,777	-0,39 %	-1,38	0,171	0,05 %	0,12	0,904
Up to the announcement												
[-1,0]	-0,15 %	-0,42	0,678	-0,05 %	-0,09	0,930	-0,25 %	-0,62	0,535	0,13 %	0,25	0,806
[-2,0]	0,14 %	0,33	0,745	-0,03 %	-0,05	0,964	0,05 %	0,11	0,915	0,19 %	0,28	0,777
[-20,0]	-0,42 %	-0,36	0,717	1,01 %	0,60	0,549	-0,78 %	-0,61	0,544	1,27 %	0,72	0,472
After the announcement												
[0,1]	-0,64 %	-1,79	0,076*	0,68 %	1,32	0,189	-0,85 %	-2,14	0,034**	0,91 %	1,67	0,096*
[0,2]	-0,87 %	-2,01	0,046**	1,02 %	1,61	0,109	-1,01 %	-2,08	0,039**	1,40 %	2,10	0,037**
[0,20]	-1,93 %	-1,67	0,096*	1,59 %	0,94	0,347	-2,14 %	-1,66	0,099*	1,59 %	0,90	0,368
Other firms (IT outsourcing)												
Announcement day												
[0]	0,23 %	0,86	0,392	0,56 %	2,48	0,014**	0,23 %	0,92	0,360	0,63 %	2,78	0,006***
Up to the announcement												
[-1,0]	0,29 %	0,79	0,429	0,81 %	2,55	0,012**	0,37 %	1,02	0,308	0,91 %	2,84	0,005***
[-2,0]	0,04 %	0,09	0,929	0,82 %	2,11	0,036**	0,02 %	0,04	0,965	0,97 %	2,47	0,014**
[-20,0]	2,06 %	1,71	0,089*	1,88 %	1,83	0,069*	1,94 %	1,65	0,101	2,12 %	2,04	0,043**
After the announcement												
[0,1]	0,53 %	1,44	0,153	0,57 %	1,79	0,075*	0,50 %	1,38	0,168	0,64 %	1,99	0,049**
[0,2]	1,12 %	2,45	0,015**	0,62 %	1,60	0,112	1,07 %	2,41	0,017**	0,75 %	1,90	0,060*
[0,20]	0,20 %	0,16	0,870	1,34 %	1,30	0,196	-0,07 %	-0,06	0,951	1,39 %	1,34	0,183
				Contractor's mean cumulative excess return						Contractor's mean cumulative excess return		
Alliances				MCER	t-test	p-value				MCER	t-test	p-value
Announcement day												
[0]				1,93 %	2,62	0,010**				1,93 %	2,62	0,010**
Up to the announcement												
[-1,0]				1,52 %	1,46	0,145				1,52 %	1,46	0,145
[-2,0]				1,67 %	1,31	0,192				1,67 %	1,31	0,192
[-20,0]				-2,57 %	-0,76	0,448				-2,57 %	-0,76	0,448
After the announcement												
[0,1]				3,87 %	3,71	0,000***				3,87 %	3,71	0,000***
[0,2]				5,38 %	4,22	0,000***				5,38 %	4,22	0,000***
[0,20]				2,99 %	0,88	0,378				2,99 %	0,88	0,378
Other announcements												
Announcement day												
[0]				0,68 %	3,60	0,000***				0,85 %	4,07	0,000***
Up to the announcement												
[-1,0]				0,56 %	2,07	0,040**				0,90 %	3,03	0,003***
[-2,0]				0,75 %	2,30	0,023**				0,95 %	2,62	0,001***
[-20,0]				0,41 %	0,48	0,635				2,07 %	2,15	0,033**
After the announcement												
[0,1]				0,93 %	3,47	0,001***				1,21 %	4,07	0,000***
[0,2]				1,19 %	3,63	0,000***				1,39 %	3,84	0,000***
[0,20]				-0,29 %	-0,33	0,741				-0,05 %	-0,06	0,955

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